

The Economic Vote in New Zealand

An analysis of how macroeconomic conditions
and perceptions of the economy affect voter
behaviour

Luke Gardener

Abstract

A large body of research suggests the performance of the economy has a significant effect on voter behaviour. However, there has been limited analysis of this issue in relation to New Zealand. This thesis seeks to correct this gap in the literature. It provides a review of the theoretical support for economic voting theory and discusses three key methods of analysis: vote functions, popularity functions, and the individual-level study. It undertakes a macro-popularity function analysis to determine the effect of impartial macroeconomic conditions on voter behaviour in New Zealand between 1978 and 2015. This is followed by a micro-individual analysis that determines the effect perceptions of the economy have on voter behaviour in New Zealand between 2002 and 2014. It finds the evidence to support economic voting in New Zealand is mixed. The macro-analysis suggests macroeconomic conditions have a minimal to moderate effect on voter behaviour. The micro-analysis finds perceptions of the economy have a stronger effect, but that partisanship is a far more important indicator of vote choice.

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List of abbreviations

| | |
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| CPI | Consumer Price Index |
| GDP | Gross Domestic Product |
| GNP | Gross National Product |
| MBIE | Ministry of Business, Innovation and Employment |
| MMP | Mixed-Member Proportional |
| NZES | New Zealand Election Study |
| OECD | Organisation for Economic Co-operation and Development |
| P-function | Popularity function |
| PIGS | Portugal, Ireland, Greece, and Spain |
| US | United States |
| V-function | Vote function |

Introduction:

The idea that the economy plays a significant role in a voter's decision at election time is not exactly new. Bill Clinton's "the economy, stupid," is a favourite line of the media and academics alike when citing the importance of economic factors in electoral success; however, it has been far from the first. The literature concerning economic voting is in fact riddled with quotations from politicians detailing the importance they place on the economy and its link to voting. Perhaps the most 'perfect' being British Prime Minister Harold Wilson's 1968 quote, "all political history shows that the standing of the government and its ability to hold the confidence of the electorate at a General Election depend on the success of its economic policy."¹ Even when politicians are not directly stating that the economy is the single biggest factor in determining an election, they spend a significant amount of time debating how well they are managing it, or if in opposition, how poorly the government is managing it.² In fact, it is a fact so often repeated that the assertion is hardly questioned. Yet, to what extent has the link actually been empirically demonstrated? Since the late 1960s there has been a significant amount of research that has attempted to measure the ties between the performance of the economy and voter decision making. Much of this research has focused on Western Europe and the United States, with relatively little work investigating this question in New Zealand. This thesis aims to correct that.

This thesis begins by reviewing the large body of work addressing the economic vote question internationally. It has a particular focus on the limited amount of research undertaken in, or on, New Zealand. It details the theoretical position underpinning the statistical modelling, before showcasing the two main types of analysis used by theorists: macro- and micro-level studies. This informs the statistical modelling I use to investigate this question for New Zealand. In chapter 2, I detail the methodology behind my macro-level study of the economic vote in New Zealand. This seeks to measure how voting is affected by impartial economic measures of the performance of the economy. Chapter 3 details the results of this study. In chapter 4 the thesis moves away from the macro-level, and details the methodology behind my micro-level study of the economic vote in New Zealand. This investigates how perceptions of the economy affect voter behaviour. Chapter 5 details the results of the micro-analysis. Lastly, chapter 6 provides a conclusion, comparing my work to some of the previous work on New Zealand, their international counterparts, and where the research should be directed in the future.

¹ Harold Wilson, 1968, cited in Douglas A. Hibbs, "Voting and the Macroeconomy," in *The Oxford Handbook of Political Economy*, ed. Barry R. Weingast and Donald A. Wittman (Oxford: Oxford University Press, 2006), 565.

² For example, see Brent Edwards, "PM Shrugs Off Worries About Economy," Radio New Zealand, <http://www.radionz.co.nz/news/political/278109/pm-shrugs-off-worries-about-economy>. 7 July 2015.

Chapter 1: Voting and the economy

An overview of the economic vote literature

Since the late 1960s there has been a significant amount of research that has attempted to measure the ties between the performance of the economy and voter decision-making, much of which has revolved around statistical modelling. The aim of this literature review is twofold. Firstly, it examines how the theory behind economic models has been built and developed to inform the statistical models, detailing both selection and sanctioning models of voting; secondly, it reviews a selection of the actual modelling work carried out across a range of political contexts and geographical locations, detailing the empirical findings to determine what we can expect in a New Zealand context.³

An economic model

By the middle of the 1950s, there had already been a vast array of literature published, particularly in the United States, aiming to test links between economic conditions and voting behaviour.⁴ However, these studies were criticised for being incredibly inconsistent in their methodology and in identifying the source of their data, for failing to measure a range of economic conditions simultaneously, and for lacking an established theoretical framework to guide their enquiry.⁵ Overall, much of the literature about voting behaviour had adopted a social-psychological approach, with voters largely seen to be influenced by societal contexts, norms, and social groupings such as class or ethnicity.⁶ This approach was radically challenged in Anthony Downs's seminal work, *An Economic Theory of Democracy*. Downs theorised that governments were rational actors that attempted to maximise votes, while voters were 'rational utility maximisers'.⁷ That is, voters attempted to maximise the utilities they received from government.⁸ In other words, voters are self-interested and make their voting decisions based on how well they expect the government or competing candidate to meet their interests. Conversely, governments want to remain in power so they aim to fulfil the 'wants' of their citizens.⁹ Downs presented this as an algebraic 'utility-function' that presented the opportunity for future statistical analysis. That is, if voters expect their economic well-being to be one of the utilities that elected officials provide for, then it should also be possible to create a model in which the support of political candidates can be linked to the performance of general economic indicators. The simple logic of the proposition is thus, voters hold the incumbent responsible for economic outcomes. When there is good economic performance, voters are more likely to vote for the incumbent; when economic conditions deteriorate, they vote for the opposition.

³ It is a selection because as of today there are at least five hundred studies concerning vote or popularity functions according to Michael S. Lewis-Beck and Mary Stegmaier, "The VP-Function Revisited: A Survey of the Literature on Vote and Popularity Functions after over 40 Years," *Public Choice* 157, no. 3-4 (2013).

⁴ Kramer provides an overview of these early works, and their findings; see Gerald H. Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964," *The American Political Science Review* 65, no. 1 (1971).

⁵ For example, see "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964", and Douglas A. Hibbs, "Voting and the Macroeconomy," in *The Oxford Handbook of Political Economy*, ed. Barry R. Weingast and Donald A. Wittman (Oxford: Oxford University Press, 2006), 566-566.

⁶ For example, see Philip E. Converse, "The Nature of Belief Systems in Mass Publics (1964)," *Critical Review* 18, no. 1-3 (2006); Paul F. Lazarsfeld, Bernard R. Berelson, and William N. McPhee, *Voting, a Study of Opinion Formation in a Presidential Campaign* (Chicago: University of Chicago Press, 1954).

⁷ Anthony Downs, *An Economic Theory of Democracy* (New York: Harper & Row, 1957), 20.

⁸ Downs, *An Economic Theory of Democracy*, 36-50.

⁹ Wants here refers to the American sense of 'desires' not needs, or things that are wanting.

This is the approach that Kramer adopted in his pioneering study of economic conditions and congressional election results in the United States, in which a number of macroeconomic conditions were analysed simultaneously to determine their impact on voting behaviour.¹⁰ Fair built on this by providing a more detailed account of the assumptions that theorists have to make to be able to build a model that can be empirically tested.¹¹ Namely, do theorists assume, like Kramer, voters to be retrospective in nature, or are voters more forward-looking, as in Downs's, or Stigler's models?¹² In the next section I discuss these two distinct theoretical positions and the implications they have for the statistical modelling.

Prospective/selection model

Selection theories of voting assume that voters actively investigate the competing parties at election time. Voters make their decision based on which candidate or party is most likely to provide the best outcomes for them. In other words, voters 'select' one candidate over another based on how they expect the candidate to perform for them in the future. This is essentially the framework that Downs used, and while he made use of both retrospective and prospective components in analysing how voters decide, in the first instance voters analysed the prospective gains they might receive from the competing parties before selecting one over the other: "each citizen ... votes for the party he believes will provide him with higher utility than any other party during the coming election".¹³ Only when competing candidates had similar campaign platforms, or the costs of finding out about candidates grew too high, would voters base their voting decision on the current and recent performance of the party in government, and the past performance of the opposition.¹⁴ Many others used the same approach; Stigler also argued that voters selected between competing parties based on the expected goods or utilities they could provide in the future.¹⁵ However, increasingly theorists pursuing selection models of voting argued that the best way for voters to determine the future performance of both the incumbent and rival candidates could be by examining their current or recent performance. Stigler allowed for the possibility that voters may be able to utilise previous economic performance information from various candidates to determine which candidate would perform well in the future. However, as we will see in the retrospective voting literature, if voters use retrospective information to inform the future, then incumbents become incentivised to create artificial conditions that will increase their standing in the short term at the expense of long-term economic benefits.¹⁶

This criticism was largely answered by the adoption of the economic theory of 'rational expectations' into the political economy field. Rational expectations theorists argued that forward-looking rational voters make decisions in the same way that static decision makers do, suggesting that voters do not repeat the same mistakes multiple times. If political candidates act to artificially adjust economic conditions to make it look as though they have had a beneficial influence on economic conditions in

¹⁰ Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964."

¹¹ Ray C. Fair, "The Effect of Economic Events on Votes for President," *The Review of Economics and Statistics* 60, no. 2 (1978).

¹² Something Hibbs points out: "Voting and the Macroeconomy," 567.

¹³ Downs, *An Economic Theory of Democracy*, 38.

¹⁴ Downs, *An Economic Theory of Democracy*, 40-50.

¹⁵ George J. Stigler, "General Economic Conditions and National Elections," *The American Economic Review* 63, no. 2 (1973): 165.

¹⁶ Raymond M. Duch, and Randolph T. Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results* (Cambridge: Cambridge University Press, 2008), 13.

the short term, voters will recognise this if a candidate attempts the same technique again, and will punish them accordingly.¹⁷ However, work by Bartels and Achen suggests that voters do a poor job of predicting future economic gains based on the recent economic performance of candidates. In their modelling, there was little difference in the performance of the economy, measured through GDP growth, whether an incumbent won re-election, or whether a new candidate or party gained office.¹⁸ Despite the relatively limited number of data points Bartels and Achen tested, if rational expectations theorists are correct in assuming that voters do not make the same mistake multiple times, then voters should not be incentivised to judge future economic performance based on past performance, as their past experience will tell them that the current economic record does not guarantee better growth in the future. Essentially, this suggests that a sanctioning model of voting is a more accurate representation of voter behaviour.

The importance of the selection approach is that utility functions that base their assumptions on this framework have to consider the recent economic performance of the opposition when they were in power, as well as the incumbent government, and in addition somehow account for whether or not voters believe that they will be better off under the alternative. Perceptions, of course, are very hard to measure statistically without significant individual questionnaire survey data.¹⁹ Conversely, if voters decide based purely on policy platforms, then office holders have no need to carry out their promises. They can simply make new ones they will not fulfil at the following election. A further problem with the selection model arises when we analyse political systems that have more than two parties.²⁰ Do voters still have the time to analyse the platforms of all competing parties when there are as many as six or more serious voting options? How do they assess the merits of a party that has not previously been in government? While a limited number of studies have attempted this form of modelling, by far the more common, and successful, model has been the sanctioning model of voting.

Retrospective voting, or a sanctioning model

*"Voters may reject what they have known; or they may approve what they have known. They are not likely to be attracted in great numbers by promises of the novel or unknown"*²¹ V. O. Key

Key's assertion that voters act in a 'sanctioning' fashion has been widely quoted by advocates of retrospective voting. According to this model, voters either choose the incumbent because they have performed adequately, or they vote against them because they have failed to do so. The opposition's policy platform or future promises have little or no influence on a voter's decision. This model had a lot of appeal for theorists, particularly following studies released by Berelson,

¹⁷ Nouriel Roubini, Alberto Alesina, Gerald D. Cohen, *Political Cycles and the Macroeconomy* (Cambridge, Mass.: MIT Press, 1997), 254.

¹⁸ Larry M. Bartels and Christopher H. Achen, "Blind Retrospection: Why Shark Attacks Are Bad for Democracy" (Nashville, Tenn.: Centre for the Study of Democratic Institutions, Vanderbilt University, 2013), 11-12.

¹⁹ Much of the recent work that employs a selection model, or a variation of it, does use cross-national individual-level survey data: for example, Duch and Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results*; and Raymond M. Duch and Randy Stevenson, "The Global Economy, Competency, and the Economic Vote," *The Journal of Politics* 72, no. 1 (2010).

²⁰ An issue raised by Morris P. Fiorina, *Retrospective Voting in American National Elections* (New Haven: Yale University Press, 1981), 202.

²¹ V. O. Key, *The Responsible Electorate: Rationality in Presidential Voting, 1936-1960*, ed. Milton C. Cummings (Cambridge, Mass.: Belknap Press of Harvard University Press, 1966), 61.

Lazarsfeld, and McPhee, Campbell et al., and Converse, that showed voters were far from the informed, civic-minded citizens that theorists had envisioned. Instead, voters were largely ill-informed, knowing little to nothing about key factors distinguishing competing candidates at elections.²² This holding true, how did voters actually decide who to vote for? The sanctioning/retrospective model proposed by Key avoided this problem by placing far fewer expectations on the voter. Voters only had to be able to tell whether they had been better off, or at least, not worse off, under the previous term of the government.²³ Later theorists adopted this position; Kramer argued that rational, self-interested voters find the costs of learning the differences between party platforms too high, realise that many campaign promises are never fulfilled, or do not feel capable of judging the technical differences between party positions.²⁴ In his model, if voters believe the performance of the incumbent to be “satisfactory according to some simple standard” then they will choose the incumbent party, while if not, they will give the opposition a chance.²⁵ Later work by Fiorina showed that even when the costs to voters were lessened, prospective selection voting did not necessarily become more prevalent; rather, retrospective voting remained the key deciding factor for voters across a range of policy areas.²⁶ Furthermore, even when it was possible to link future expectations to vote preference, these future expectations could be linked to retrospective judgements.²⁷ In Fiorina’s work, elections became “referenda on the incumbent administration’s handling of the economy.”²⁸

A key aspect of the retrospective model is that voters have a relatively short memory; how far back in time does the retrospective voter look? Kramer’s 1971 study determined that it was economic data in the 12 months leading to an election that was significant.²⁹ More recent work by Achen and Bartels showed that voters are largely affected by conditions in the two quarters preceding the election.³⁰ In an attempt to remove any of the possible bias from political factors associated with testing this, Huber, Hill and Lenz carried out a number of ‘politically neutral’ experiments.³¹ Their experiment used a computer allocator to give participants money in random way. At the end of the payout cycle participants were given the option of switching allocators, or retaining the same one. Those participants who experienced higher payouts nearer the time they were allowed to change allocators were far more likely to remain with the same allocator. Those who received higher

²² Bernard R. Berelson, *Voting: A Study of Opinion Formation in a Presidential Campaign*; Philip E. Converse, "The nature of belief systems in mass publics (1964)," *Critical Review* 18, no. 1-3 (2006); and P. Converse A. Campbell, W. Miller, and D. Stokes, *The American Voter* (New York: John Wiley & Sons, 1960).

²³ Also an argument adopted by Fiorina, *Retrospective Voting in American National Elections*, 5.

²⁴ Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964."

²⁵ Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964," 134.

²⁶ Fiorina, *Retrospective Voting in American National Elections*, 61-62.

²⁷ Fiorina, *Retrospective Voting in American National Elections*, 196-200.

²⁸ Fiorina, *Retrospective Voting in American National Elections*, 26.

²⁹ Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964." This was subsequently shown to be true by many of the other key economic vote theorists during the period. For example, see Edward R. Tufte, *Political Control of the Economy* (Princeton, N.J.: Princeton University Press, 1978); and Fair, "The Effect of Economic Events on Votes for President."

³⁰ Christopher H. Achen and Larry M. Bartels, "Musical Chairs: Pocketbook Voting and the Limits of Democratic Accountability," (Paper presented at the Annual Meeting of the American Political Science Association, Chicago, 2004), 21, 36.

³¹ Seth Hill, Gregory Huber, and Gabriel Lenz, "Sources of Bias in Retrospective Decision Making: Experimental Evidence on Voters’ Limitations in Controlling Incumbents," *American Political Science Review* 106, no. 04 (2012).

amounts in general, but lower amounts closer to the time of their choice, were more likely to change allocators, showing the weight that voters are likely to place on recent economic events.³² The overall sentiment of much of the literature is that retrospective vote models should not incorporate effects that happened more than 12 months in the past.³³

The basic theory of retrospective voting has been criticised, however. Rational expectations theorists decried it for being overly “naïve and irrational;” could it be rational behaviour for voters to simply ignore the policy position of the opposition as a result of pursuing a sanctioning model of voting?³⁴ Furthermore, under the retrospective voting model, if the incumbent realises that some of his performance has been poor enough for the electorate to reject him at the next election, or if he or she simply does not want to run at the next election, then the incumbent will simply pursue his or her own “private interests,” having no need to fulfil voter utilities.³⁵ In this situation, voters would ignore the incumbent’s previous experience, realising that once in office, they would not actually pursue the same beneficial actions as in the previous term.³⁶ Furthermore, if voters are retrospective and myopic, only considering their situation in the year leading up to the election, then political leaders are incentivised to manipulate conditions in that year, creating “business cycles” so as to ensure their re-election.³⁷ Another criticism of the sanctioning model of voting was that the incumbent would be able to exploit individual rational actors by pursuing a ‘divide and rule’ tactic to ensure that the electorate could not sanction them; others argued that such a small number of people were affected by unemployment fluctuations that it would be very unlikely a model using an unemployment variable could find a real measurable effect.³⁸ These claims were largely put to rest by adaptations first suggested by Barro. Firstly, Barro argues that a candidate’s membership of a wider party that has an interest in their next candidate being elected, prevents an incumbent in their last term acting completely against the wishes of their constituents.³⁹ Ferejohn utilises the notion of the sociotropic voter, taken from Kiwiet, to detail how the sanctioning model can avoid the ‘divide and rule’ problem. By assuming voters make their decision based on wider economic conditions, rather than their own personal ‘pocketbook,’ voters cannot be individually ‘bribed’ to vote for a candidate, because they are more concerned about the overall health of the economy. This also addressed the problem of why voters who are not made unemployed still vote against the government if unemployment increases.⁴⁰ Overall however, the main argument taken by both Barro and Ferejohn

³² Hill, Huber, and Lenz, "Sources of Bias in Retrospective Decision Making: Experimental Evidence on Voters' Limitations in Controlling Incumbents."

³³ Though there is a significant part of the vote-function literature pioneered by Hibbs that advocates a weighted model; economic data more than 12 months old is included in the model, but recent economic conditions are given more significance.

³⁴ Hibbs, "Voting and the Macroeconomy," 569.

³⁵ John Ferejohn, "Incumbent Performance and Electoral Control," *Public Choice* 50, no. 1-3 (1986): 6.

³⁶ Ferejohn, "Incumbent Performance and Electoral Control," 6-7.

³⁷ Ferejohn, "Incumbent Performance and Electoral Control," 9. See also William D. Nordhaus, "The Political Business Cycle," *The Review of Economic Studies* 42, no. 2 (1975). Tufte also identifies this as a problem: see his conclusions in particular, Tufte, *Political Control of the Economy*, 137.

³⁸ Stigler, "General Economic Conditions and National Elections."

³⁹ Robert J. Barro, "The Control of Politicians: An Economic Model," *Public Choice* 14 (1973).

⁴⁰ Ferejohn, "Incumbent Performance and Electoral Control," 11, 22. Pocketbook voting is also found to have little or no effect across the five European countries included in Lewis-Beck’s micro-level study: see Michael S. Lewis-Beck, *Economics and Elections: the Major Western Democracies* (Ann Arbor: University of Michigan Press, 1988), 155. Earlier work also pointed to the voter’s ability to detect the performance of the national

is that sanctioning is a rational voting behaviour because the failure of an electorate to reward a government for good performance, or to punish them for bad behaviour, encourages rent-seeking behaviour.

Despite a large array of literature on the subject, the retrospective or sanctioning model of voter behaviour has changed relatively little, and is still a relevant means of assessing voter behaviour. It is also a theory that we would expect to apply to New Zealand, based on the circumstantial evidence of political pundits, and the media's claim that New Zealand governments lose elections, rather than opposition parties winning them.⁴¹

Empirical findings

Whether theorists have employed a sanctioning model or a selection model, their empirical research has usually focused on one of three avenues of investigation: vote functions; popularity functions; or individual-level studies. In this section I discuss a selection of the findings in each of these methodologies, with an in-depth review of how each method has been utilised in New Zealand.⁴²

Vote functions

Vote-function analyses have aimed to test whether there is a measurable link between elections and a range of 'objective' economic conditions, usually using some kind of regression analysis, most often ordinary least-square regression. Pioneers in this field began with Kramer's investigation of the vote for the US House of Representatives between 1896 and 1964. He ran the congressional election results against the rate of inflation, per capita income rate growth, real income rate, and unemployment, in the year leading to the election. Kramer found that a 10% decrease in per capita real personal income in the year of the election would cost the incumbent administration 4-5% of the congressional vote, other things being equal. He argued that, in the period examined, considered economic fluctuations could account for 50% of the change in vote.⁴³ However, Kramer found no link between the unemployment rate, or rate of inflation, and election results.

Kramer's results were immediately attacked by Stigler, who argued that the effect of real income in Kramer's model became statistically insignificant by adding or removing only one or two years from the data set, and that the time period that was selected for the economic data, the year leading up to election, was less logical than using a two-year period which coincided with the congressional election cycle.⁴⁴ However, the two-year cycle that Stigler claimed is more logical, does not actually fit with the now large body of literature – that has already been discussed here – showing us that voters are relatively myopic and unlikely to be able to recall conditions more than 12 months in the

economy through media sources; see David Butler and Donald Stokes, *Political Change in Britain: Forces Shaping Electoral Choice* (London: MacMillan, 1969), 390.

⁴¹For example, in an interview in the *Dominion Post* with Phil Goff, Goff states "Bob Chapman, my professor of politics [at Auckland], taught me and everyone else in his classes that oppositions don't win elections, governments lose them. And that's probably a fact of life." See Anthony Hubbard, "Phil Goff reveals he has not given up hope," *Dominion Post*, <http://www.stuff.co.nz/dominion-post/news/politics/5644526/Phil-Goff-reveals-he-has-not-given-up-hope>. 18 September 2011.

⁴² It is a selection, because as some recent wider reviews note, the literature on the subject now spans well over 500 separate papers, often repeating the same methodology, but in a different geographical or political context.

⁴³ Kramer, "Short-Term Fluctuations in U.S. Voting Behavior, 1896-1964," 141.

⁴⁴ Stigler, "General Economic Conditions and National Elections," 164.

past.⁴⁵ What is more important about the Stigler-Kramer critique is it highlights how minor alterations – whether time period, or independent variable – to the statistical models can quickly find significant results turning insignificant, depending on how the researcher has chosen to specify the model, a point I will return to further on in this chapter.

Contrary to Stigler's criticism, theorists have largely confirmed Kramer's initial findings in a variety of different geographical contexts and types of elections. In the United States, presidential elections have consistently been shown to link with macroeconomic indicators. Fair concluded that the growth rate of real per capita Gross National Product (GNP) and the change in unemployment were the most significant in affecting the success of the president, with each percentage point increase or decrease causing a 1% change in the vote for the incumbent.⁴⁶ Tufte found that in presidential elections between 1948 and 1978, a 1% improvement in real disposable income per capita increases the support for the incumbent presidential candidate by 1.3%.⁴⁷ Erikson, using the same economic variables, determined that real income had an almost three on one effect; a 1% increase in real per capita income causing a 3% swing in votes for the incumbent.⁴⁸ More recent examples on presidential voting in the United States also show the same effect; Bartels and Zaller found the Bush victory in 2000 fitted the same economic voting criteria of presidential elections back to 1948, with real income once again being the key economic variable.⁴⁹ The most recent definitive work, by Hibbs, concludes that the only two variables that consistently and adequately describe US presidential elections from 1948 to 2008 are that of the weighted average growth of per capita income over the president's term, and the cumulative total US military deaths due to "unprovoked, hostile deployments of American armed forces in foreign wars."⁵⁰ Overall, the conclusion across these studies is that a 1% change in annual per capita real income growth creates a 2-4% increase in the support for the incumbent party's presidential candidate.⁵¹

United States congressional elections have also received further attention since Kramer's pioneering study. Tufte found a 1% change in income leads to a 0.6% change in the midterm vote for congressional candidates belonging to the incumbent president's party.⁵² This was built on in later studies and confirmed in a variety of other work; Jacobson and Kernell, Lewis-Beck and Rice, and Lewis-Beck and Tien found that real income was important in congressional elections, and that the relationship in their vote functions was strong enough to predict future congressional results.⁵³

⁴⁵ In Paldam's review essay he notes that none of the 300 works utilising a vote or popularity function have ever found evidence to suggest that voters use economic information from as long ago as two years in the past: Martin Paldam, "Are Vote and Popularity Functions Economically Correct?," in *The Encyclopedia of Public Choice*, ed. Friedrich Schneider and Charles Rowley (Boston: Kluwer Academic Publishers, 2004), 52.

⁴⁶ Fair, "The Effect of Economic Events on Votes for President," 167.

⁴⁷ Tufte, *Political Control of the Economy*, 121.

⁴⁸ Robert S. Erikson, "Economic Conditions and the Presidential Vote," *The American Political Science Review* 83, no. 2 (1989): 568.

⁴⁹ Larry M. Bartels and John Zaller, "Presidential Vote Models: A Recount," *PS: Political Science and Politics* 34, no. 1 (2001).

⁵⁰ Douglas A. Hibbs, "Obama's Reelection Prospects under 'Bread and Peace' Voting in the 2012 US Presidential Election," *PS: Political Science & Politics* 45, no. 04 (2012): 635.

⁵¹ Duch and Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results* 18.

⁵² Tufte, *Political Control of the Economy*, 111-12.

⁵³ Gary C. Jacobson and Samuel Kernell, *Strategy and Choice in Congressional Elections*, 2nd ed. (New Haven, Conn: Yale University Press, 1983); Michael S. Lewis-Beck and Tom W. Rice, "Forecasting U. S. House

However, congressional election results have never fared quite so well as the presidential vote, with a number of studies finding no relationship at all, or attributing the relationship to a presidential coat-tails affect.⁵⁴ There is a possibility however, that this has been caused more by problems in the economic data set. Kiwiet and Udell repeat Kramer's equations with macroeconomic conditions based on revised estimates. They find that Kramer's initial estimates of the effect of real income were accurate, and that the unemployment rate does become a key indicator of vote choice with every 1% increase in unemployment leading to a 0.9-1.3% drop in votes for the incumbent.⁵⁵

If the evidence or relationship is still debated across different forms of elections in the United States, the evidence is more mixed when the same methodologies have been employed in other countries. Across Europe, various single-country studies have been undertaken, with differing results. France and the United Kingdom generally have the strongest evidence outside the United States. Early French work by Rosa and Amson found that rises in unemployment and inflation increased support for left-leaning parties, while increases in real income decreased their vote.⁵⁶ Lewis-Beck and Bellucci reached the same conclusion, arguing that increases in unemployment and decreases in real income "significantly enhance the vote for the left" in French legislative elections.⁵⁷ More recently, Auberger finds the French vote for candidates in the European parliament is also correlated with an unemployment variable, and the annual growth of GDP.⁵⁸ In the United Kingdom, most theorists have employed the popularity function I will discuss in the next section; however, a number of theorists have modelled vote functions, usually in an attempt to forecast elections. Mughan, for example, concludes that an economic vote-function model is key in determining British election results.⁵⁹ More recently, Lewis-Beck, Nadeau and Bélanger utilise a retrospective forecasting model to conclude that inflation is the key economic variable for the United Kingdom, with a 1% increase in inflation leading to a 1% decrease in government support.⁶⁰

Elections," *Legislative Studies Quarterly* 9, no. 3 (1984); Michael S. Lewis-Beck and Charles Tien, "The Referendum Model: A 2010 Congressional Forecast," *PS: Political Science and Politics* 43, no. 4 (2010).

⁵⁴ For example, James E. Campbell, "Explaining Presidential Losses in Midterm Congressional Elections," *The Journal of Politics* 47, no. 4 (1985); Alberto Alesina and Howard Rosenthal, "Partisan Cycles in Congressional Elections and the Macroeconomy," *American Political Science Review* 83, no. 2 (1989); Richard Born, "Strategic Politicians and Unresponsive Voters," *The American Political Science Review* 80, no. 2 (1986): 609.

⁵⁵ D. R. Kiwiet and M. Udell, "Twenty-Five Years after Kramer: An Assessment of Economic Retrospective Voting Based Upon Improved Estimates of Income and Unemployment," *Economics & Politics* 10, no. 3 (1998): 237.

⁵⁶ Jean-Jacques Rosa and Daniel Amson, "Conditions économiques et élections: une analyse politico-économétrique (1920-1973)," *Revue française de science politique* 26 (December 1976). Cited in Michael S. Lewis-Beck and Paolo Bellucci, "Economic Influences on Legislative Elections in Multiparty Systems: France and Italy," *Political Behavior* 4, no. 1 (1982): 95.

⁵⁷ Lewis-Beck and Bellucci, "Economic Influences on Legislative Elections in Multiparty Systems: France and Italy"; Michael S. Lewis-Beck, "Economics and the French Voter: A Microanalysis," *Public Opinion Quarterly* 47, no. 3 (1983): 348.

More recent work in France has also used vote functions in an attempt to create forecasting models. For example, see Jérôme Bruno and Véronique Jérôme-Speziari, "The 2004 French Regional Elections: Politico-Economic Factors of a Nationalized Local Ballot," *French Politics* 3, no. 2 (2005).

⁵⁸ Antoine Auberger, "Forecasts of the 2004 French European Election," *Swiss Political Science Review* 11, no. 3 (2005).

⁵⁹ Anthony Mughan, "General Election Forecasting in Britain: A Comparison of Three Simple Models," *Electoral Studies* 6, no. 3 (1987).

⁶⁰ M. S. Lewis-Beck, R. Nadeau, and E. Bélanger, "General Election Forecasts in the United Kingdom: A Political Economy Model," *Electoral Studies* 23, no. 2 (2004): 285. More recent predictive variations of vote functions in

The French cases highlight another difference in results between countries. They suggest the ideological background of a party or candidate can affect which economic variables have an impact. That is, left- and right-wing governments are held accountable for different effects. Powell and Whitten, and Hibbs identify that governments to the right of the political spectrum have traditionally been more concerned with issues of inflation, while governments on the left have been more concerned with unemployment or wider welfare issues.⁶¹ In fact, Hibbs finds that generally this can be understood to result from the traditional support base parties have drawn from. Parties of the left have usually drawn their support from blue-collar workers and urban liberals. Conversely, right-of-centre parties have generally drawn their support from the rural and business sectors, or from higher-paid white-collar workers who are more concerned about inflation than unemployment. Much of the literature however has not found any party-specific difference. Perhaps the most compelling reason for this is because voters are not looking at each variable as a measure of their individual value as unemployment or inflation indicators, but as a measure of the overall health of the economy.⁶² In this respect, we would not necessarily expect to see a difference in party, rather, rising unemployment, inflation, and erosion of real wage rates affect the party in government because when unemployment and inflation reach high levels, and real wages decrease, the whole economy is likely to be performing badly. Despite the lack of consensus on whether the left–right differentiation exists, the ease of inserting a variable to control for party means this should be tested in any economic vote model.

While there have been successful vote functions in a number of other countries ranging from Colombia to Portugal, the successful results can be contrasted against Italy and a number of Scandinavian countries that have all shown significantly less convincing relationships.⁶³ Early Italian studies did find that increased inflation led to more support for opposition parties to the left of the political spectrum, but the effect was relatively limited. Despite the changing economic conditions,

the United Kingdom have moved away from macroeconomic conditions. Instead, they use individual polls, looking specifically at the electorate's satisfaction with the Prime Minister, a 'collect-all' measure for satisfaction with economic and political concerns. See Richard Nadeau, Michael S. Lewis-Beck, and Éric Bélanger, "Election Forecasting in the United Kingdom: A Two-Step Model," *Journal of Elections, Public Opinion and Parties* 19, no. 3 (2009).

⁶¹ G. Bingham Powell and Guy D. Whitten, "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context," *American Journal of Political Science* 37, no. 2 (1993); Douglas A. Hibbs, R. Douglas Rivers, and Nicholas Vasilatos, "On the Demand for Economic Outcomes: Macroeconomic Performance and Mass Political Support in the United States, Great Britain, and Germany," *The Journal of Politics* 44, no. 2 (1982). Kramer and Goodman also suggest there may be differences in the way parties are judged for economic conditions based on their ideological position: Saul Goodman and Gerald H. Kramer, "Comment on Arcelus and Meltzer, the Effect of Aggregate Economic Conditions on Congressional Elections," *The American Political Science Review* 69, no. 4 (1975): 1264-65. Rosa and Amson, and Lewis-Beck and Belluccini also conclude the same effect operates in France. Rosa and Amson, "Conditions Economiques Et Elections: Une Analyse Politico-Econometrique (1920-1973)"; Lewis-Beck and Bellucci, "Economic Influences on Legislative Elections in Multiparty Systems: France and Italy."

⁶² An argument highlighted by D. Roderick Kiewiet, *Macroeconomics & Micropolitics: The Electoral Effects of Economic Issues, Macroeconomics and Micropolitics* (Chicago: University of Chicago Press, 1983).

⁶³ In Portugal, a range of economic indicators, particularly unemployment, are significant at both the local and national level in determining political support: see Francisco José Veiga and Linda Gonçalves Veiga, "The Impact of Local and National Economic Conditions on Legislative Election Results," *Applied Economics* 42, no. 13 (2010). In Colombia, unemployment was shown to be a key factor in support for the incumbent's party in presidential elections. This was, however, coupled with security concerns measured through paramilitary human rights violations: see Jennifer S. Holmes and Sheila Amin Gutiérrez de Piñeres, "Security and Economic Voting: Support for Incumbent Parties in Colombian Presidential Elections," *Democratization* 20, no. 6 (2013).

one party, the Christian Democrat Party, held power in various forms for more than fifty years, something that does not exactly show resounding support for the sanctioning model of economic voting.⁶⁴ Early studies analysing vote functions across Sweden, Norway, and Denmark, found increases in inflation to negatively affect incumbent support in Denmark, but not in Norway or Sweden, and increases in unemployment to decrease support significantly in Sweden, but to have no effect in Norway or Denmark.⁶⁵ These conflicting results across countries have been somewhat counterintuitive given the promising results that came out of the United States. A number of explanations have been provided for this, predominantly the political context in which the analysis takes place, a concept I will discuss under a separate heading further on in this chapter.

Despite the conflicting results, vote functions can, and have, been used to show a link between macroeconomic conditions and election results. The main weakness with the vote function itself however, is the lack of data points available to researchers. Even the more promising of results, for example Tufte's, only used eight data points.⁶⁶ When a large data set is available, as in the case of Kramer's original study, the economic vote relationship is complicated by changes within the electorate over the long time period; the electorate's expectations of what exactly the government can do to alter the economy may have changed markedly. It has only been since the 1930s with the advent of Keynesian economics that governments can be seen to have had more of a responsibility for unemployment and inflation, neo-liberal reforms notwithstanding.⁶⁷ In New Zealand, even if one aimed to test macroeconomic conditions against election results for the post-World War II period, the number of elections actually numbers only 24. If you add the limited time span for which official macroeconomic data is available, the number of elections falls to approximately ten. Effectively, it makes this means of analysis relatively unhelpful in New Zealand. As I will discuss in the next section, a popularity-function analysis is more viable.

Despite the difficulties in carrying out this type of analysis in New Zealand, a limited number of researchers have attempted to model this relationship. Hudson and Weaver sought to test the economic vote hypothesis in the period 1945-75. Their analysis tested 19 economic factors as well as modelling certain non-economic effects, such as a 'drag of office' and a mid-term change of Prime Minister. They concluded that real per capita income growth, inflation in the election year, and GNP rates, were responsible for 98% of the change in vote, making the contentious claim that "Non-economic contemporary issues account for at most 2% of the electoral swing."⁶⁸ These bold claims were immediately attacked. Firstly, they were criticised for using the change in seats in the New Zealand House of Representatives instead of the actual vote numbers as their dependant variable. Under a first-past-the-post system the proportion of seats a government holds in parliament rarely matches the division of actual votes cast. If the economic vote theory is about how voters are

⁶⁴ Lewis-Beck and Bellucci, "Economic Influences on Legislative Elections in Multiparty Systems: France and Italy"; Paolo Bellucci, "Italian Economic Voting: A Deviant Case or Making a Case for a Better Theory," in *Economics and Politics, the Calculus of Support*, ed. Michael S. Lewis-Beck, Jean-Dominique Lafay and Helmet Norpoth (Ann Arbor: University of Michigan Press, 1991).

⁶⁵ Bruno S. Frey, "Politometrics of Government Behavior in a Democracy," *The Scandinavian Journal of Economics* 81, no. 2 (1979): 313.

⁶⁶ Tufte, *Political Control of the Economy*.

⁶⁷ B. S. Frey and F. Schneider, "Economic and Personality Determinants of Presidential Popularity," *Empirical Economics* 3, no. 2 (1978).

⁶⁸ Edward A. Hudson Maarten L. Wevers, "New Zealand General Elections: A Formal Analysis," *Political Science* 29, no. 1 (1977): 14.

affected by economic conditions, then the number of seats each party gains does not necessarily measure this.⁶⁹ Furthermore, their findings were based on only ten points in time, despite the relatively long time period. Critics argued that any analysis using such a limited number of data points, while using such a large number of economic variables, made it inevitable a chance relationship was going to be found with at least one of the variables.⁷⁰ While Hudson and Weaver wrote a reply to these criticisms, many of their answers failed to address the concerns raised.⁷¹

As part of the attack on Hudson and Weaver's model, Gough and Brunk undertook their own analysis. Instead of the change in seats in the New Zealand House of Representatives they used the percentage change in the level of support for the incumbent party, measured through real election results, as the dependent variable, and regressed it against a limited number of economic factors, namely the change in GNP and the inflation rate, as well as non-economic factors such as a perceived incumbency factor – where it was assumed incumbent governments gradually lost support regardless of performance.⁷² They concluded that not only was the assertion that 98% of the swing in vote in New Zealand was associated with economic fluctuations optimistic in the extreme, but that there was little or no evidence to support the notion that economic voting had had any kind of effect on New Zealand elections in the period examined.⁷³ Further, when using Hudson's and Weaver's model in a predictive fashion to determine the result of the 1978 election, it suggested Labour would win with a majority of approximately 21 seats. However, the actual result was the National Government remaining in power with a majority of 10 seats.⁷⁴

A limited number of cross-national studies have also used New Zealand elections as part of their vote-function models. Powell and Whitten, and Whitten and Palmer, both utilise New Zealand elections in their tabulations. While they do not discuss the specific results they found for New Zealand, it is included in the group of countries they determined had the highest levels of economic vote, as a result of relatively clear lines of accountability between government and electorate.⁷⁵ Recently, Bouvet and King have completed a cross-national study of OECD countries, of which New Zealand is a part, finding a 1% percent increase in the unemployment rate decreased the main incumbent party's share of the vote by 0.27%.⁷⁶

Popularity functions

In an attempt to address the inherent problems with vote functions, namely the lack of data points, researchers have adopted two different solutions. The first of these is a popularity function. Instead

⁶⁹ R. H. Brookes, "The Hudson-Wevers Analysis: A Rejoinder," *Political Science* 29, no. 1 (1977); Paul A. Gough and Gregory G. Brunk, "Are Economic Conditions Really Important for New Zealand Elections?," *Political Science* 33, no. 1 (1981).

⁷⁰ Paul A. Gough and Gregory G. Brunk "A Re-Examination of the Relationship between Economic Conditions and Elections," *Political Science* 33, no. 2 (1981): 158.

⁷¹ Brookes, "The Hudson-Wevers Analysis: A Rejoinder."

⁷² Gough and Brunk, "A Re-Examination of the Relationship between Economic Conditions and Elections."

⁷³ Gough and Brunk, "A Re-Examination of the Relationship between Economic Conditions and Elections," 161.

⁷⁴ A point raised by Heinrich W. Ursprung, "Explaining Party Support: Sociological, Economic and Political Determinants," *Political Science* 36, no. 1 (1984): 12.

⁷⁵ Powell and Whitten, "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context"; Guy D. Whitten and Harvey D. Palmer, "Cross-National Analyses of Economic Voting," *Electoral Studies* 18, no. 1 (1999).

⁷⁶ Florence Bouvet and Sharmila King, "Income Inequality and Election Outcomes in OECD Countries: New Evidence Following the Great Recession of 2008–2009," *Electoral Studies* 41 (2016): 76.

of using elections, researchers have used opinion poll results as a substitute; their regularity and closer alignment with the release of macroeconomic data makes it far easier to create reliable statistical models. In some cases we see popularity functions showing a strong relationship where vote functions found none.⁷⁷ Most of this research still uses a form of regression analysis.

Mueller provides the original example of this. He used the popularity of the United States President in polls, measured by presidential approval ratings, and compared it to unemployment and a range of political conditions he believed affected the vote.⁷⁸ He concluded that for every percentage point rise in unemployment over the rate at which the president started his term, his popularity would fall by three percentage points.⁷⁹ However, this fit was only possible when the assumption was made that an increase in unemployment harms a government, but a decrease in unemployment had no effect; "Bust is bad for him but boom is not particularly good."⁸⁰ His method also involved accounting for a number of non-economic variables such as: the 'drag of office,' an assumption that popularity declines at a steady rate over the term of a president, resulting a steady alienation of a number of minority groups;⁸¹ 'rallying around the flag,' a variable to account for popularity boosts from international crises where it was assumed the American public would rally around the president; and the involvement of the United States in wars, something that was assumed to have a negative effect on presidential popularity. While Mueller was able to find a statistically significant relationship, a number of these variables did not apply to particular presidents in his series, and Mueller's provides a rather ad-hoc explanation of why these should be ignored and why they should not cause his model to be discounted. Mueller's model was also criticised for using only one economic variable, unemployment, rather than a selection of relevant variables that could have a compound effect.⁸²

Goodhart and Bhansali used a similar method in the United Kingdom. Using two different sets of opinion poll data, they modelled the lead of the government over the main opposition party against inflation, unemployment, and various electoral effects, for example, post-election honeymoon periods. While finding little or no correlation with many of their economic independent variables, they concluded that the unemployment rate, particularly when lagged by six months, was highly correlated to support or lack thereof for the government.⁸³ For nearly every 10,000 out of work, the government would lose 1% of the popular lead. The authors seemed to believe this was too large to be plausible and advised caution in extrapolating this into the future.⁸⁴ Their work was attacked by critics immediately; however, much of the later work in the United Kingdom also followed the

⁷⁷ For example, Frey undertakes a vote function across Denmark, Norway, and Sweden. He finds an increase in inflation to negatively affect incumbent support in Denmark, but not Norway and Sweden, and increases in unemployment to decrease support in Sweden, but to have no effect in Norway and Denmark. In contrast, his popularity function found inflation and unemployment to affect all three countries. Frey, "Politometrics of Government Behavior in a Democracy," 315.

⁷⁸ The question asked was whether respondents approved or disapproved of the president.

⁷⁹ John E. Mueller, "Presidential Popularity from Truman to Johnson," *The American Political Science Review* 64, no. 1 (1970): 29.

⁸⁰ Mueller, "Presidential Popularity from Truman to Johnson," 23.

⁸¹ Mueller, "Presidential Popularity from Truman to Johnson," 20.

⁸² A criticism raised by Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity."

⁸³ C. A. E. Goodhart and R. J. Bhansali, "Political Economy," *Political Studies* 18, no. 1 (1970): 59-60.

⁸⁴ Goodhart and Bhansali, "Political Economy," 63.

popularity-function methodology and found evidence to support the hypothesis.⁸⁵ For example, Frey and Schneider's model found that a 1% increase in each of their variables – unemployment, inflation, and nominal disposal income – resulted in a change in the vote of -3.45-3.70%, -1.16-1.99%, and 0.50-0.72% respectively.⁸⁶ Pissarides concluded that growth in consumption, the ratio of GDP taken by the government in various taxes, balance of payments indicators, and to a lesser extent inflation and unemployment lagged by six months, all had an effect on the popularity of the government. However, 1% increases in these variables never changed the vote by more than 0.25%.⁸⁷ Whiteley too found evidence for the economic vote, finding that inflation, unemployment with an eight-month lag, and the devaluation of the Pound were all statistically significant indicators of government popularity.⁸⁸

Much like in vote functions, since these pioneering studies a vast array of popularity functions have been carried out in a myriad of different political contexts, with the United States again showing the strongest levels of economic voting.⁸⁹ However, a range of other countries has also shown significant relationships. Lewis-Beck provides an excellent overview of early popularity functions in France. He details that the general trend supported elsewhere is present in France, with the vote for the Prime Minister and the President during the Fifth Republic proving to be associated with fluctuations in unemployment, inflation, and real income, though there was no agreement on which variable had the largest effect.⁹⁰ In Portugal, Veiga analyses three levels of government, concluding that "A one percentage point decrease in the unemployment rate is estimated to increase the popularity of the Prime Minister by 0.90 percentage points; the Government by 0.71; the Parliament by 0.55; and the President by 0.92."⁹¹ Later work by Veiga and Veiga concluded that unemployment, together with a honeymoon period, were considered to be key indicators for support for the incumbent party holding office in the Portuguese Parliament.⁹² The list of countries with successful popularity functions goes on, with much of Europe experiencing at least one popularity function, as well as less established democracies, such as Uruguay.⁹³

⁸⁵ Frey and Garbers attacked the statistical method employed by Goodhart and Bhansali. They argued the two forms of regression used, spectral analysis and multiple regression analysis, were contradictory to one other, and only one could be correct. See Bruno S. Frey and Hermann Garbers, "'Politico-Econometrics'-on Estimation in Political Economy," *Political Studies* 19, no. 3 (1971).

⁸⁶ Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity," 88.

⁸⁷ Christopher A. Pissarides, "British Government Popularity and Economic Performance," *The Economic Journal* 90, no. 359 (1980).

⁸⁸ Paul F. Whiteley, "Macroeconomic Performance and Government Popularity in Britain: The Short Run Dynamics," *European Journal of Political Research* 14, no. 1-2 (1986).

⁸⁹ For the United States, see Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity"; Samuel Kernell, "Explaining Presidential Popularity: How Ad Hoc Theorizing, Misplaced Emphasis, and Insufficient Care in Measuring One's Variables Refuted Common Sense and Led Conventional Wisdom Down the Path of Anomalies," *American Political Science Review* 72, no. 02 (1978). Kristen R. Monroe, "Economic Influences on Presidential Popularity," *Public Opinion Quarterly* 42, no. 3 (1978); Hibbs, Rivers, and Vasilatos, "On the Demand for Economic Outcomes: Macroeconomic Performance and Mass Political Support in the United States, Great Britain, and Germany."

⁹⁰ Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 18-20.

⁹¹ Linda Rosa Fonseca Gonçalves Veiga, "Popularity Functions for the Portuguese Prime Minister, Government, Parliament and President," *European Journal of Political Research* 33, no. 3 (1998): 355.

⁹² Francisco José Veiga and Linda Gonçalves Veiga, "Popularity Functions, Partisan Effects, and Support in Parliament," *Economics & Politics* 16, no. 1 (2004).

⁹³ Andrés Rius, "El Gobierno, La Economía y el Hombre de la calle," *Suma* 7, no. 13 (1992).

In New Zealand, Ursprung adopted a popularity function to examine the economic vote between 1970 and 1981. His model uses the lead of the government of the day over the major opposition party, and uses the independent variables of the inflation rate, unemployment rate, balance of payments deficit or surplus; and the rate of growth in per capita real GNP. He also adds a number of political dummy variables into his equation. However, as he admits himself, this is purely done on a 'common sense' and ad-hoc basis, where variables are chosen that seem to make sense, for example, the Springbok Tour. Ursprung concludes that the current balance of payments account seemed to be of key importance and that "the basic hypothesis of the economic theory of voting behaviour cannot be rejected."⁹⁴ According to Ursprung, New Zealand does indeed have a high economic vote. However, his finding of a link with the balance of payments account does not generally fit the trend discovered in other countries. Further, Ursprung's selection of the lead of the government over the nearest opposition party is no longer considered the best variable for a popularity or vote function in New Zealand. When Ursprung undertook his study, New Zealand had predominantly a two-party system, with the occasional success, in a limited fashion, of the Social Credit Party. Ursprung accounts for the third party by creating a dummy variable to account for the loss of votes in polls where Social Credit does well. However, a better method is to simply use the percentage change in support for the incumbent from poll to poll. This is a method that makes more sense since New Zealand has adopted a Mixed-Member Proportional (MMP) system and now has a number of minor parties that gain approximately 20% of the total vote. A further problem with Ursprung is that he never specifies how the data set is actually created. He refers to the Heylen Research Poll, but does not state how the economic data is made to align with the poll dates, making it very difficult to replicate his results.

While popularity functions dramatically increase the number of observations available to researchers, there are a number of important questions to address. Primarily, are opinion polls an accurate or meaningful substitute for actual elections? Early studies highlighted that voters may be more likely to say they would not vote for the government when an election is not imminent.⁹⁵ Others have highlighted that polling is one step removed from elections, and the assumption that one equals the other is not necessarily correct.⁹⁶ Some of the popularity-function literature suggests that P-functions often provide better results than V-functions because participants are more likely to give a "gut response" to the question, rather than in voting, where a myriad of competing factors cause the certainty of an answer given in a poll to change somewhat.⁹⁷ In other words, voters are potentially more likely to signal disapproval of government action in an opinion poll, but on election day will vote to keep them in. More recently, when the results of the 2015 British general election were announced, polling companies reacted with surprise. Pre-election polling was showing an election too close to call, with Labour and the incumbent Conservative Government neck and neck. The actual result was a seven-point margin between the Conservatives, who retained power, and the Labour Party, which suffered a somewhat embarrassing defeat. Is opinion poll data then an accurate

⁹⁴ Ursprung, "Explaining Party Support: Sociological, Economic and Political Determinants," 34.

⁹⁵ W. L. Miller and M. Mackie, "The Electoral Cycle and the Asymmetry of Government and Opposition Popularity: An Alternative Model of the Relationship between Economic Conditions and Political Popularity," *Political Studies* 21, no. 3 (1973): 255-56, 279. Pissarides, "British Government Popularity and Economic Performance," 570.

⁹⁶ Lewis-Beck and Stegmaier, "The VP-Function Revisited: A Survey of the Literature on Vote and Popularity Functions after over 40 Years."

⁹⁷ Jocelyn A. J. Evans, "Voting and the Economy," in *Voters & Voting: An Introduction* (London: Sage, 2004), 122.

substitute for voting? The latest information about what went wrong in the United Kingdom suggests that it was not so much participants lying, or making a different vote to what they told pollsters, but that the sampling methods do not accurately recruit a 'real' sample of the population. Many of the polls in the United Kingdom were undertaken through door-knocking, and recruited a higher number of young, Labour voters, rather than older Conservatives, who were more likely to be out. In New Zealand, one would expect the opposite effect. As most polling is undertaken through telephone surveys, the bias would be towards the National Party, or New Zealand First, as younger age groups, students, and even middle-class working families, are more likely to either not have a landline, or be out. Rather, one would expect recruitment to be of older middle-aged people. Despite these concerns, with the exception of the 2005 election, the Heylen and Colmar Brunton Poll data is generally never more than two to three percentage points away from the correct election result. Perhaps the best point that can be made for the use of opinion polls as an accurate measure is that governments, particularly the present one in New Zealand, take close notice of them and thus take them to have a high level of accuracy.

Conflicting results in vote and popularity functions

Even with the increased number of variables popularity functions allowed, the popularity-function research was proving to be as different across countries as the vote-function literature, even when the same model was employed. For example, Anderson, in his first basic model, shows that the effect of a 1% change in unemployment affected incumbent vote share by -0.25% in the United Kingdom, -0.67% in France, -0.13% in Denmark, and -0.03% in the Netherlands.⁹⁸ In this section of the review I detail some of the hypothesised reasons for the conflicting message from vote and popularity functions across countries. Firstly, I address why there are conflicting results from the same country where studies seem to be similar. Secondly, I detail the differences in political contexts across states that may contribute to the vast differences.

The first question to ask is, are the inconsistent results related to citizen's lack of knowledge of the economy? Are voters actually informed about the unemployment rate, or rate of inflation? There is work to suggest that voters are not able to accurately state the level of any of the objective macroeconomic factors researchers use.⁹⁹ Could the often conflicting results be explained by the electorate's lack of knowledge about real macroeconomic conditions? Kramer's initial assertion provides a theoretical position for why this should not be the case. Voters do not necessarily have to know the exact level of any of the economic conditions, just whether they feel the economy seems to be performing better or worse than at the previous election. Sanders showed that British voters, while failing to identify the exact rate of economic indicators, were aware enough of the general economic situation to be affected by it, and vote with knowledge of the general performance of the economy.¹⁰⁰ Earlier micro-level work by Kiewiet suggested that the proportion of voters naming inflation or unemployment as the most important election issue increased as the rates themselves did, something that seems to confirm Sanders findings.¹⁰¹ The fact that so many studies have found a

⁹⁸ Christopher Anderson, *Blaming the Government, Citizens and the Economy in Five European Democracies* (Armonk, NY.: M. E. Sharpe, 1995), 8.

⁹⁹ Peter Nannestad and Martin Paldam, "Into Pandora's Box of Economic Evaluations: A Study of the Danish Macro VP-Function, 1986–1997," *Electoral Studies* 19, no. 2–3 (2000).

¹⁰⁰ David Sanders, "The Real Economy and the Perceived Economy in Popularity Functions: How Much Do Voters Need to Know?: A Study of British Data, 1974–97," *Electoral Studies* 19, no. 2–3 (2000): 291.

¹⁰¹ Kiewiet, *Macroeconomics & Micropolitics: The Electoral Effects of Economic Issues*, 83–4.

link would suggest that generally Kramer's assertion is correct: most citizens have an idea of how the economy is performing, or at least whether it is better or worse than it was over the previous 12 months, if not the exact levels.

Overall, much of the difference in results can be explained by the different measurements that individual scholars chose to use. For example, the dependent variable that has been chosen has been as diverse as: the number of seats won or lost in the legislative body;¹⁰² the change in percentage of vote of the incumbent party;¹⁰³ the lead over the main opposition party;¹⁰⁴ or, the change of vote of the incumbent above or below its average expected rate of vote calculated from previous elections.¹⁰⁵ Independent variables have been just as diverse, ranging from the unemployment rate¹⁰⁶ or the rate of inflation,¹⁰⁷ to income measures,¹⁰⁸ such as the rate of change in per capita real income,¹⁰⁹ general income growth rates,¹¹⁰ as well as GNP growth,¹¹¹ and the balance of payments account.¹¹² Not only have the variables themselves been different, but how they have been measured has also differed. A number of sources have used the actual levels of unemployment or income; others have used first-level differences from year to year, or quarter to quarter, or have measured the change in the economic indicators as a percentage above or below the rate at which the candidate started his term. Others have followed Mueller's initial hypothesis that the economic data is only important when it is negative.¹¹³ Further, the relationship is often

¹⁰² Wevers and Hudson, "New Zealand General Elections: A Formal Analysis."

¹⁰³ Powell and Whitten, "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context."

¹⁰⁴ Goodhart and Bhansali, "Political Economy."

¹⁰⁵ Edward R. Tufte, "Determinants of the Outcomes of Midterm Congressional Elections," *American Political Science Review* 69, no. 3 (1975); Kernell, *Strategy and Choice in Congressional Elections*; Born, "Strategic Politicians and Unresponsive Voters."

¹⁰⁶ Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity."

¹⁰⁷ Goodman and Kramer, "Comment on Arcelus and Meltzer, The Effect of Aggregate Economic Conditions on Congressional Elections"; Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity."

¹⁰⁸ Whitten and Palmer, "Cross-National Analyses of Economic Voting."

¹⁰⁹ Goodman and Kramer, "Comment on Arcelus and Meltzer, the Effect of Aggregate Economic Conditions on Congressional Elections."; Erikson, "Economic Conditions and the Presidential Vote."

¹¹⁰ Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity."

¹¹¹ Fair, "The Effect of Economic Events on Votes for President."

¹¹² Ursprung, "Explaining Party Support: Sociological, Economic and Political Determinants."

¹¹³ A number of authors detail why this may be in effect, primarily, that as voters are most likely to get their information from the media, the media plays a key role in perceptions of the real economy. The media tends to focus on bad rather than good news stories, and as a result voters may be exposed to more information about the economy when it is doing poorly than when it is doing well. Paldam and Nanstved also compare the market to the political market to detail how voters are generally risk-averse, and much like in the real marketplace, risk-averse buyers, or in this case voters, are far more likely to weight negative information more highly than positive information. See Peter Nannestad and Martin Paldam, "The Grievance Asymmetry Revisited: A Micro Study of Economic Voting in Denmark, 1986–1992," *European Journal of Political Economy* 13, no. 1 (1997): 83. However, a number of key studies do not find the asymmetrical relationship to be true. For example, Kiewiet's seminal study, *Macroeconomics & Micropolitics: The Electoral Effects of Economic Issues*, 99, and Lewis-Beck's micro-level study of five countries, Lewis-Beck, *Economics and Elections: the Major Western Democracies*. Others find that while an improving economy can have a benefit for the incumbent, economic voting is stronger when the economy is poorer. For example, Lewis-Beck concludes that moving from a -2% growth rate to a -1% growth rate is significantly more beneficial to the incumbent, compared to the case if they presided over a period in which they raised growth from 1% to 2%. See Ruth Dassonneville and

significant at different times. For example, vote functions generally weight the economic performance by the change between the election date, and a year prior, while popularity functions have found either an immediate effect, or a lagged relationship of three to 12 months.¹¹⁴ What becomes clear is that there is no consensus on the best time period or variable to use.

Then there are the various political variables that are included. There have been political cycle effects: for example, the assumption that no matter what else is happening, incumbents lose votes across their term.¹¹⁵ Another popular political cyclical variable, the honeymoon dummy, is often inserted to account for the belief that governments are not judged for a period of time after they have won an election. Again, different researchers have assumed different time periods apply. For example, Goodhart and Bansali use an ever-decreasing variable starting at 12 and decreasing by one each month after the election, while others simply used a period that lasted for one or two quarters. There is no hard data to suggest that the variable should be included at all, or, if it is included, which time period applies, and whether it applies equally to all governments. Other non-economic variables that are rated highly are conflict variables. For example, a number of works have included a variable to control for the number of American casualties in overseas conflicts.¹¹⁶ Similar variables already alluded to in this chapter include 'rally around the flag' variables, to account for foreign crises that boost domestic support: for example, the Argentinian decision to invade the Falkland Islands, and the British decision to go to war in response. Dummy variables have also been used to account for economic shocks beyond what one would expect in a well-run economy. For example, recent work has inserted variables to account for the 2008 Global Financial Crisis.¹¹⁷ What becomes clear is that, other than stating broadly that the big three economic factors deemed to be important are inflation, unemployment, and real income, there is little to no consensus on a rule for selecting variables, both economic and political, other than what makes sense for an individual researcher in their particular country of research. Perhaps something that lends credibility to the general theory of economic voting is that, despite all of these discrepancies, much of the work has still found a reasonably significant economic effect on government support.

More importantly than how each researcher has decided to test for the economic vote is the political context in which the study has taken place. As alluded to earlier, even when the same methodology has been employed across countries, the results have been significantly different. A number of theories have been postulated to account for this, predominantly Powell and Whitten's

Michael S. Lewis-beck, "Macroeconomics, Economic Crisis and Electoral Outcomes: A National European Pool," *Acta Politica* 49, no. 4 (2014): 385.

¹¹⁴ For example, Goodhart and Bhansali's original study concluded the unemployment variable was far more significant when lagged at six months, while Whiteley concluded that it was eight months. See Goodhart and Bhansali, "Political Economy"; Whiteley, "Macroeconomic Performance and Government Popularity in Britain: The Short Run Dynamics."

¹¹⁵ This has been described as the 'coalition of minorities' effect. The theory assumes that the president, or incumbent government, cannot please everyone all the time. Eventually, enough minority groups will have been ostracised that their combined number can change the government.

¹¹⁶ For example, Hibbs, "Obama's Reelection Prospects under 'Bread and Peace' Voting in the 2012 US Presidential Election."

¹¹⁷ The GFC was not considered to have had a more significant effect than other economic downturns. See Dassonneville and Lewis-beck, "Macroeconomics, Economic Crisis and Electoral Outcomes: A National European Pool," 383.

centrality of control.¹¹⁸ The “greater the perceived unified control of policymaking by the incumbent government, the more likely is the citizen to assign responsibility for economic and political outcomes to the incumbents.”¹¹⁹ To account for this, they differentiate countries based on whether: the government is made up of one or multiple parties; parties are generally coherent in their voting; the political system has a strong committee-based legislative process in which legislative powers of the government are ameliorated; the system of government is based upon a unicameral or bicameral system. They find that in countries where the government’s responsibility is ameliorated, both inflation and unemployment indicators show little to no relationship, but in cases where the responsibility for economic conditions can more directly be attributed to the government, centre-right governments are “sharply punished” for high inflation, while centre-left governments are “sharply punished” for unemployment.¹²⁰ The centrality of control thesis has been confirmed in other work as well. Paldam and Schneider’s study of the Danish economic vote showed that when the period 1957-79 was analysed as a whole there was little or no relationship between the vote and economic conditions; however when the period was split into two, to reflect a change from a two-party to a multiparty system, economic effects again became significant.¹²¹

More recent work has focused on the level of exposure individual countries have to international markets. Duch and Stevenson propose that countries that are more reliant on their economic prosperity through international trade are less likely to have a strong economic vote, as voters do not attribute blame to government for external shocks, recognising they are something the government could not necessarily protect against.¹²² Further, in assessing government culpability, voters compare the situation in their own country to how things are with neighbours, to determine whether the economic woes are something the government should be blamed for.¹²³ However, other work examining the PIGS (Portugal, Ireland, Greece, and Spain) and the economic vote during the Global Financial Crisis in 2008 found that those governments were turned out because of the poor economic situation.¹²⁴ There is however perhaps a difference between these countries and New Zealand, which experienced a slight downturn, but largely as the result of the collapse of other markets, not because there was inherent financial mismanagement in New Zealand.

A further reason suggested for the different results between countries is the national difference between citizens and what they personally place importance on. Nansted and Paldam argue that economic fluctuations in Denmark may be less significant compared to other countries due to the

¹¹⁸ Powell and Whitten, "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context." See also Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 159.

¹¹⁹ Powell and Whitten, "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context," 398.

¹²⁰ "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context," 408-09. Whitten and Palmer remodelled this relationship using a larger data set and slightly different selection criteria in 1999. Their results are similar to the original study, with countries that have strong governments, whose legislative powers are not watered down, showing significantly higher correlations between macroeconomic factors and the vote. See Whitten and Palmer, "Cross-National Analyses of Economic Voting."

¹²¹ Martin Paldam and Friedrich Schneider, "The Macro-Economic Aspects of Government and Opposition Popularity in Denmark 1957-78," *Nationaløkonomisk tidsskrift* 118 (1980).

¹²² Duch and Stevenson, "The Global Economy, Competency, and the Economic Vote."

¹²³ Duch and Stevenson, "The Global Economy, Competency, and the Economic Vote," 113-14.

¹²⁴ Michael S. Lewis-Beck and Richard Nadeau, "PIGS or Not? Economic Voting in Southern Europe," *Electoral Studies* 31, no. 3 (2012).

importance voters place on political issues vis-à-vis the economy.¹²⁵ Though this explanation does not answer whether citizens are more concerned about political issues because the economy has been in a stable state that allows them to forget about the economy, or whether citizens genuinely care less about economic issues in Denmark. To get to the bottom of this, significant micro-level survey data is required, something that is not necessarily available in all countries.

If we apply all of the above to our expectations for New Zealand, we would expect to be able to detect a strong economic vote. From 1978, where my data set starts, to 1996, New Zealand operated under a two-party system. The National and Labour parties held sway, with a third party, Social Credit, only maintaining an occasional presence, but with little influence, in parliament. Since 1996, the introduction of an MMP system has diluted the one-party control of government somewhat. Every government since 1996 has either been a coalition, or relied on a support and supply agreement with one to three parties. However, in each of these coalitions the government has still predominantly been formed by either the National or Labour parties. While this may convolute the responsibility for the economy, as suggested by Powell and Whitten, I do not believe it diffuses responsibility enough for a problem to arise. The minor parties in support and supply agreements have little say in the government's economic policy, and are unlikely to receive the blame when things go wrong. New Zealand also fits the other criteria for having a strong economic vote. It has a unicameral system, often described as an elected dictatorship. For much of the last 60 years New Zealand has had a political system where one party assumes government, and all of the power associated with it. New Zealand does have a select committee process that bills appear before; however, these committees are usually chaired by members of parliament from the government, and as each proposed amendment from a select committee still has to be voted on by the entire legislative chamber, this is unlikely to divert attention away from the main party in government when things go wrong. Lastly, there is the potential the economic vote in New Zealand could be weakened, based on our high reliance on trade, and our very liberal markets which have been in operation since the reforms undertaken by the fourth Labour Government (1984-1990).¹²⁶ Generally however, it seems likely that while governments are likely to escape some of the blame if voters view an economic downturn to be the result of actors in other states, voters will increasingly punish the government if they cannot do anything to ameliorate the situation in the long term.

Individual-level/micro-studies

Popularity functions and vote functions still have a number of issues. Namely, they rely on the assumption that voters' perceptions of the economy align in some way with the actual condition of the economy as measured through macroeconomic conditions. Further, for popularity and vote functions to work, it has to be assumed that voters are sociotropic, caring about the overall health of the economy, rather than egotropic, caring about their own personal pocketbook. As I discussed as part of the sanctioning model of voting, if it was only the personal economic situation that mattered, then not enough people would be affected by conditions such as unemployment to cause a swing in the vote. Although we have a theoretical position from Kramer, and some empirical data from

¹²⁵ Nannestad and Paldam, "Into Pandora's Box of Economic Evaluations: A Study of the Danish Macro VP-Function, 1986–1997," 136.

¹²⁶ However, in Duch and Stevenson's own work, they show that the economic vote for the chief executive in New Zealand, the party controlling the House of Representatives, is exceptionally high. See Duch and Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results*, 67.

Sanders, to show that this may not be the most important cause of the differing results in vote and popularity functions, a number of authors have looked elsewhere for answers to the economic vote question. In order to bypass any perception or 'translation bias' from the real economy to perceptions of the economy, researchers have examined the economic vote through individual-level survey studies.¹²⁷ Individual surveys have tended to find stronger evidence for the 'economic vote' because they are able to ask individuals what they actually think, rather than relying on once-removed macroeconomic indicators. Further, individual-level data allows researchers to account for a wide range of factors that may affect voter behaviour and are otherwise not available in aggregated data; for example, ethnicity, class, income, or religion. They are also able to specifically address the nature of the economic vote: is it sociotropic, as much of the popularity and vote-function literature assumes, or are voters more egotropic?

Individual studies showed evidence to support the economic vote fairly early on. Butler and Stokes surveyed a number of individuals in the United Kingdom, asking them questions that have become, with slight variation, and additions, the standard economic queries in micro-studies:

Question 1, prospective sociotropic: "Do you think that next year [the economy] will be better than this year?"¹²⁸

Question 2, retrospective egotropic: "Compared with a year ago are you and your family better off now, worse off now, about the same?"¹²⁹

Question 3, prospective egotropic: "Now looking ahead over the next three or four years, do you think that you will be better off then, worse off then, about the same then, don't know?"¹³⁰

They then compared these with a question relating to who respondents voted for at the election. They concluded that those who thought their economic situation had improved over the previous 12 months were far more likely to vote for the incumbent government, while those who felt it had worsened were far more likely to vote against the government.¹³¹ However, they do not discuss whether there was a link between prospective economic optimism and vote choice. Further, they do not ask a retrospective sociotropic question, something much of the later research attributes a significant effect to.

Similar results emerged from early work in the United States. Kiewiet's study asked participants whether they believed their family finances to be better, worse, or the same compared to their situation in the previous year, to tap the egotropic perspective, and asked whether business conditions in the last 12 months had got better, worse, or stayed the same over the last 12 months, to tap the sociotropic perspective.¹³² While asking about business conditions is perhaps not the best, or most direct, way of enquiring about the national economy, Kiewiet's results nevertheless showed a strong link between positive national economic assessments and participants' support for the

¹²⁷ Nannestad and Paldam, "Into Pandora's Box of Economic Evaluations: A Study of the Danish Macro VP-Function, 1986–1997," 125-26.

¹²⁸ Butler and Stokes, *Political Change in Britain: Forces Shaping Electoral Choice*, 401.

¹²⁹ Butler and Stokes, *Political Change in Britain: Forces Shaping Electoral Choice*, 402.

¹³⁰ Butler and Stokes, *Political Change in Britain: Forces Shaping Electoral Choice*, 403.

¹³¹ Butler and Stokes, *Political Change in Britain: Forces Shaping Electoral Choice*, 404-06.

¹³² Kiewiet, *Macroeconomics & Micropolitics: The Electoral Effects of Economic Issues*, 96-99.

incumbent president.¹³³ Since then, most studies have included prospective and retrospective questions on a respondent's personal finances and how they view the national economy as performing. However, as with the macro-level studies, discrepancies between countries soon emerged, with examples from the United Kingdom and France generally showing support for the thesis, while countries such as Norway and Italy did not.¹³⁴

As a result of the inconsistencies across countries, work soon turned to cross-national studies in attempts to harmonise methodology and data across a range of political contexts. The most influential of these early cross-national works was Lewis-Beck's five-country micro-level examination of the economic vote. Lewis-Beck used a European Barometer survey that asked questions similar to those outlined in Butler and Stokes's original work. It asked "compared with a year ago, would you say that the government's policies have had a good effect, a bad effect, or that they really have not made much difference with regard to the financial situation of your household?"¹³⁵ and "how do you think the general economic situation in this country has changed over the last 12 months?"¹³⁶ He also asked similar questions designed to tap the prospective vote.¹³⁷ Lewis-Beck found that there was a link between those who believed the economic situation had worsened and those who were dissatisfied with the government's performance.¹³⁸ Further, when he tested for actual vote record for or against incumbents when compared to perceptions of the economy, he found that across the five European countries tested, there was a statistically significant relationship between economic performance, as perceived by voters, and their decision to vote for the incumbent, or against him.¹³⁹ These linkages were more commonly found to be sociotropic rather than egotropic; voters cared more about the national economy than their own financial situation. Furthermore, Lewis-Beck concluded that voting was not asymmetric; that is, voters did reward and punish equally, rather than simply punish the government for poor economic performance. However, despite the consistent methodology, the effect of economic factors across countries was inconsistent, with the United Kingdom for example having a far stronger economic vote than Italy.¹⁴⁰

¹³³ Kiewiet, *Macroeconomics & Micropolitics: The Electoral Effects of Economic Issues*, 96-9.

¹³⁴ For example, early French work by Lewis-Beck 1983 concluded that participants who viewed the national economy or their own individual economic situation to have deteriorated were more likely to vote for a left-leaning party. See Lewis-Beck, "Economics and the French Voter: A Microanalysis." In the United Kingdom, as well as the early work by Butler and Stokes already cited, Clark and Stewart concluded that retrospective views on the performance of the national economy were a significant determinant of incumbent support, and, to a lesser extent, so were prospective national views. See Harold D. Clarke and Marianne C. Stewart, "Economic Evaluations, Prime Ministerial Approval and Governing Party Support: Rival Models Reconsidered," *British Journal of Political Science* 25, no. 02 (1995). For the Norwegian case, see Arthur H. Miller and Ola Listhaug, "Economic Effects on the Vote in Norway," *Political Behavior* 6, no. 4 (1984); for Italy, Paolo Bellucci, "Economic Concerns in Italian Electoral Behavior: Toward a Rational Electorate?," *Political Behavior* 6, no. 4 (1984). However as Stevenson and Duch point out, the findings of these studies have been questioned by others: see Duch and Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results*, 22.

¹³⁵ Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 36.

¹³⁶ Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 36-37.

¹³⁷ See Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 44, for all the questions asked by Lewis-Beck.

¹³⁸ Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 46.

¹³⁹ Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 49, 67.

¹⁴⁰ Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 155-56.

More recent cross-national studies have continued to show differences across political contexts despite employing the same method of analysis. For example, Lobo and Freire found that perceptions of the economy related to the actual unemployment rate in both Portugal and Spain, but not Greece.¹⁴¹ They concluded that economic voting operated quite differently across the three countries, with the economic vote in Portugal being more important than social class, but less important than ideology. In contrast, Spain had a far higher economic vote; ideology however remained the most significant factor.¹⁴² They also found that Greece had strong economic voting, both prospective and retrospective, but it was not as significant as ideology in a voter's decision-making behaviour.

All of this work has perhaps culminated in the exhaustive 2008 study of Duch and Stevenson. They examined individual survey data across 19 countries over 20 years. They also found the performance of the economy to be strongly linked with voter decision-making across a number of constituencies, but not all.¹⁴³ The cause of these discrepancies is generally argued to be the same as those in the macro-studies: namely, citizen confusion about who to 'punish or reward' in multiparty governments or bicameral parliaments, as well as a country's exposure to international market conditions. As these issues have been discussed in the previous section, they will not be discussed again here.

While the primary focus of micro-studies has been to measure the effect of economic variables, many studies, as alluded to in some of the work discussed above, have incorporated non-economic factors into their models. Rather than exhaustively looking at every factor that could affect particular elections, they have tended to include other large variables which have consistently been seen to be part of a voter's decision-making process: usually ideology, religion, or class. The literature discussing contending vote motivations to the economic thesis is vast and is of secondary importance to the question I am asking: "is the economy an important factor in how voters decide in New Zealand?" Therefore, I will touch briefly on the controls that others have used, rather than conducting an in-depth review of the various competing traditions of vote choice and behaviour. Lewis-Beck, in his pioneering cross-national study, controls for the religious beliefs of participants, their 'class,' and their self-placement on a left-right scale of political ideology.¹⁴⁴ His controls have been followed by much of the literature since, with small differences. For example, the most recent exhaustive examination of the economic vote, Duch and Stevenson's 2008 book, uses a similar left-right control to determine participants' ideological placement.¹⁴⁵ However, others have used a party partisanship variable to accomplish the same thing, where individuals' self-identification with a particular party is used.¹⁴⁶ The idea of both forms of the partisanship variable is that voters who identify with a particular party or with a particular ideology are more likely to vote for that party

¹⁴¹ André Freire and Marina Costa Lobo, "Economics, Ideology and Vote: Southern Europe, 1985–2000," *European Journal of Political Research* 44, no. 4 (2005): 501.

¹⁴² Freire and Lobo, "Economics, Ideology and Vote: Southern Europe, 1985–2000," 510-12.

¹⁴³ See Duch and Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results*.

¹⁴⁴ See Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 57-62.

¹⁴⁵ Duch and Stevenson, *The Economic Vote: How Political and Economic Institutions Condition Election Results* 47-4, 85-8.

¹⁴⁶ For example, Charles Crothers & Jack Vowles, "The Material Conditions of Voting," in *Voters' Vengeance: The 1990 Election in New Zealand and the Fate of the Fourth Labour Government*, ed. Jack Vowles and Peter Aimer (Auckland: Auckland University Press 1993).

regardless of how the economy is actually performing. In some cases they may state the economy is performing better than it actually is.

The two other variables used in international studies have been class and religion. Both of these fit into a social-cleavage style of vote behaviour; voters' preferences are believed to be shaped by the social cleavages in society. Lewis-Beck, in his cross-national study, details that European voter behaviour can be seen to be a result of class differences and religious identification. Class has long been seen to be a key part of voting behaviour, with working-class voters consistently seen to vote for parties of the left.¹⁴⁷ Religion too has been seen to be a key part; much of the European vote research suggests those who are "more faithful in their religious practices" are more likely to vote for right-wing or centre parties.¹⁴⁸ Whether this is relevant in New Zealand is something I will discuss in the following section.

Individual-level studies in New Zealand

The poll or survey data that allows this kind of investigation is relatively limited in New Zealand. Researchers have had to rely on historic Heylen Research Centre poll data, and then Colmar Brunton data, of which there is no single repository. The data available is aggregated, so researchers have not been able to account for individual distinctions among voters that may affect their economic vote; for example, party membership. Despite these difficulties, Vowles and Crothers model the Heylen data from 1984-90, and again in 1993-96, to determine whether there is a relationship between the percentage change in voters professing support for the government, and those who believed in the next 12 months the economic performance of the country would be better, the same, or worse.¹⁴⁹ They find that "for every one percentage point increase in economic optimism, the lead of the government over the opposition increased by just under half a percentage point."¹⁵⁰ However, as Vowles and Crothers state themselves, the economic question in the survey is purely prospective, rather than retrospective, and as a result is likely to have underplayed the actual role of the economy in voters' decision making.¹⁵¹ Unfortunately, the Heylen and Colmar Brunton polls have failed to ask, or have only asked sporadically, a question that can tap the retrospective vote.

Since 1990, however, a far better individual-level survey has been undertaken, *The New Zealand Election Study*. The NZES has sent out a large battery of questions designed to tap a wide range of opinion pertaining to political issues at each election. While the survey is more consistent than the Heylen Research Centre polls, it too has asked slightly different economic questions over time. In the 1990 survey there were eight questions designed to measure the economic vote. However, since then this has been reduced to four, then three, and finally two economic questions in the 2011 and

¹⁴⁷ Though since Lewis-Beck's 1988 study, much discussion has revolved around the death of class-based politics.

¹⁴⁸ As argued by Lewis-Beck, *Economics and Elections: the Major Western Democracies*, 58; but for an example see Ola Listhaug, "The Gender Gap in Norwegian Voting Behaviour," *Scandinavian Political Studies* 8, no. 3 (1985).

¹⁴⁹ Vowles and Crothers, "The Material Conditions of Voting," 102-3.

¹⁵⁰ "The Material Conditions of Voting," 103.

¹⁵¹ "The Material Conditions of Voting"; this is also shown in Jack Vowles, "Values, Perceptions, and Voting Choice," in *Towards Consensus? The 1993 Election in New Zealand and the Transition to Proportional Representation*, ed. Peter Aimer Jack Vowles, Helena Catt, Jim Lamare, Raymond Miller (Auckland: Auckland University Press, 1995); and Peter Aimer, "Polls That Count: From One Election to the Next" in *Voters' Veto: The 2002 Election in New Zealand and the Consolidation of Minority Government*, ed. Peter Aimer Jack Vowles, Susan Banducci, Jeffrey Karp, Raymond Miller (Auckland: Auckland University Press, 2004).

2014 studies.¹⁵² The utilisation of this for economic arguments has been relatively limited and inconsistent across NZES publications. In 1990, Vowles and Crothers wrote an entire chapter on the economy and vote choice. The same methodology was employed again for the 1993 election, but from 1996 there is no direct analysis of economic perceptions and vote.¹⁵³ Rather, the analysis looks at how economic perceptions influence trust in government; 1999 sees an economic dissatisfaction measure created to test the relationship between this and voter turnout.¹⁵⁴ In the two NZES books that directly address the economic question in New Zealand, we find a relatively small impact on the vote. Voters who believed the government to have a beneficial effect on their household over the previous year were 34% more likely to vote for the government than someone who had perceived bad effects.¹⁵⁵ Likewise, those who perceived the government's effect on the national economy to have improved over the previous 12 months, or perceived the economy of the country over the last 12 months to have improved, were 27% and 29% more likely to vote for the government.¹⁵⁶

The actual method employed by Vowles and Crothers in the original 1990 survey involved comparing both retrospective and prospective economic questions to a question asking which party each respondent had voted for. The Y value became a vote for or against the government, so as to fit with the large body of literature detailing a sanctioning model of voting. Vowles and Crothers also employed three control variables that may have had an effect on whether voters cast a vote for or against the government: partisanship, religious affiliation, and class. The partisanship variable asked whether voters felt particularly close to a party; Crothers and Vowles determined that voters who felt close to a particular party were more likely to view the economic situation favourably. The religious affiliation variable was inserted because it was used in other international studies, most notably the 1988 cross-national study employed by Lewis and Beck.¹⁵⁷ Lastly, they controlled for the work respondents were employed in; a control designed to provide for the assumption that class affects the way voters decide. For example, farmers are more likely to vote National while manual wage workers are more likely to vote Labour.

However, the use of these control variables in New Zealand is debatable. The religious variable in Vowles and Crothers' study was included so it would be comparable to Lewis-Beck's 1988 study; however, the role of religion in New Zealand politics is questionable. While New Zealanders are still

¹⁵² The reason for this can be explained to some degree by the serial autocorrelation between some of these questions. The answers were so interlinked it made little sense to ask all eight questions. However, the reduction to two questions is disappointing as it does not allow us to analysis the sociotropic or egotropic nature of voting amongst New Zealanders.

¹⁵³ Vowles and Crothers, "The Material Conditions of Voting."

¹⁵⁴ See Jeffrey Karp and Susan Banducci, "Voter Satisfaction after Electoral System Change," in *Voters' Victory? New Zealand's First Election under Proportional Representation*, ed. Peter Aimer Jack Vowles, Susan Banducci and Jeffrey Karp (Auckland, NZ: Auckland University Press, 1998), 163. While Vowles finds that there is a relationship between economic dissatisfaction and voter turnout, it is, however, incredibly small. See Jack Vowles, "The Puzzle of Turnout," in *Proportional Representation on Trial: The 1999 New Zealand General Election and the Fate of MMP*, ed. Peter Aimer, Jack Vowles, Jeffrey Karp, Susan Banducci, Raymond Miller, and Ann Sullivan (Auckland: Auckland University Press, 2002), 109-10.

¹⁵⁵ *Towards Consensus? The 1993 General Election in New Zealand and the Transition to Proportional Representation*, ed. Vowles, Aimer, and Catt (Auckland: Auckland University Press, 1995), 71.

¹⁵⁶ *Towards Consensus? The 1993 General Election in New Zealand and the Transition to Proportional Representation*, ed. Vowles, Aimer, and Catt 70-71.

¹⁵⁷ Lewis-Beck, *Economics and Elections: the Major Western Democracies*. However, this has still been used in far more recent studies, for example, in Portugal, Spain, and Italy. See Freire and Lobo, "Economics, Ideology and Vote: Southern Europe, 1985–2000."

relatively religious — according to the 2013 census more than 55% of the population identify with at least one religion, compared to 41% professing no such link — religion in New Zealand has never played the same role as it has in countries such as the United States, Italy, Ireland, and Portugal.¹⁵⁸ In the United States, it is commonly asserted that a presidential candidate cannot win without some reference to, or affiliation with, a faith.¹⁵⁹ In Europe, there has been a long-standing history of church interference in the policies of the state.¹⁶⁰ New Zealand does not have the same relationship between church and state, nor between various parties and churches. The New Zealand Labour Party has had a long-standing affiliation with the Ratana church, but the impact on policy or across the nation is limited. Other attempts at religious ‘interference’ in the political system have met with ridicule, or failure. In 2005 self-styled ‘bishop’ Brian Tamaki mobilised the Destiny Church in opposition to civil union legislation, creating the political party Destiny NZ. Despite a lot of media attention, the party received 0.62% of the vote. In the same year, the Exclusive Brethren funded a large leaflet drop attacking the Labour-led government and the Green Party. The links they had with the National Party, later revealed by Nicky Hager, led to the resignation of the then leader of the National Party, Don Brash.¹⁶¹ More recently we have seen the Conservatives, under Colin Craig, attempt to use Christian values as a basis for political integrity in the newly created party. While the party achieved 3.97% of the total vote in the 2014 election, this hardly counts as mass mobilisation of the large Christian population in New Zealand.¹⁶² The party has since been ruined by allegations concerning Craig’s relationship with his former press secretary. Religion as a vote shaper, in the broader sense discussed by Lewis-Beck — having a strong faith makes one more likely to vote for those at the centre or to the right — also seems unlikely, if only because Vowles and Crothers’ study found almost no effect.¹⁶³ Religion is not a key driver of politics in New Zealand, and therefore a control variable is not required.

Class has historically been a factor in the way New Zealanders vote. The Labour Party was founded on the West Coast by coal miners, and has historically represented workers. Whether Labour is still the ‘working man’s’ party is questionable. The adoption of neo-liberal ideology in the 1980s saw Labour’s traditional base alienated, while electorate seats that had historically been National strongholds almost became Labour seats, as National’s wealthy urban voters turned to the neo-liberal agenda proposed by Labour. Whether this has reversed is questionable; however, a wage or income control variable may still be worthwhile to measure this effect. I will discuss this in my methodology.

¹⁵⁸ See New Zealand Government, "2013 Quickstats About Culture and Identity," (Wellington: Statistics New Zealand, 2014).

¹⁵⁹ See Julie Butters, "Why America Can't Separate Religion and Politics and What That Means for the 2016 Elections," *arts and sciences*, College of Arts & Sciences, Boston University, <http://www.bu.edu/cas/magazine/fall15/america/>. 1 Sep. 2015. See also David E. Campbell and Robert D. Putnam, "God and Caesar in America: Why Mixing Religion and Politics Is Bad for Both," *Foreign Affairs* 91, no. 2 (2012).

¹⁶⁰ For example, in Ireland see Patrick Semple, "Previous Generations Would Be Astounded at Attitudes to Churches in Ireland Today: A 60-Year Journey from Obsequious Conformity," *The Irish Times*, <http://www.irishtimes.com/news/social-affairs/religion-and-beliefs/previous-generations-would-be-astounded-at-attitudes-to-churches-in-ireland-today-1.2004480>. 18 Nov. 2014.

¹⁶¹ Nicky Hager, *The Hollow Men: A Study in the Politics of Deception* (Nelson, N.Z.: Craig Potton, 2006).

¹⁶² New Zealand Government, "The 2014 New Zealand General Election: Final Results and Voting Statistics," <https://www.parliament.nz/en/pb/research-papers/document/00PLLawRP2015011/final-results-2014-general-election>. 25 Feb. 2015.

¹⁶³ See Vowles and Crothers, "The Material Conditions of Voting."

Overall, the use of individual-level studies in New Zealand remains underutilised, considering the dataset now available to researchers. The individual-level survey also has a range of advantages over the macro-level study, particularly its role in measuring perceptions of the economic vote. Any examination of the economic vote should include a section using individual-level data.

Conclusion

Where, then, does the literature leave us in regard to New Zealand? A broad range of conclusions can be drawn: firstly, in countries such as the United States and the United Kingdom, 'simple' single-country studies based on impartial economic conditions being regressed against election or opinion poll results have largely been proven. In New Zealand, this means of testing has not been utilised, apart from a handful of studies in the 1980s. While individual survey-level studies are more successful in showing a consistent relationship, vote functions and popularity functions are not a redundant means of testing. Much recent work still utilises these, and the fact that most studies have found a significant relationship shows that despite citizens interpreting the economy differently than one would expect if they had based their information purely on macroeconomic conditions, this is a relevant and current method of testing the vote in countries that have otherwise lacked much investigation. Further, it should be noted that individual-level surveys and popularity functions are measuring two different things. The former measures perceptions of a wide section of the electorate at one particular point in time. The latter is essentially measuring the average effect of economic conditions across a time series. If we want to gain an understanding of the average effect of economic conditions on the vote in New Zealand over time, then a macro-level popularity function is the method we should choose. However, the best way to examine the economic vote question in New Zealand is to adopt both approaches.

Secondly, based on the findings in other political and geographical contexts, one should expect New Zealand to have a relatively large economic vote. New Zealand's political system essentially creates an elected dictatorship where power is concentrated in the hands of a single party, or since 1996, a single party with a coalition party that wields limited influence. Voters should perceive the government is to blame for unsatisfactory economic conditions. Despite some suggestions that more open economies are less likely to attribute blame to the government for external shocks, there should still be enough blame placed on the government for detrimental economic effects to affect government support.

Thirdly, the economic variables that should be included in any macro-level analysis are the rate of inflation, the unemployment rate, and a real income measure. While other variables, such as the balance of payments account, have proved to be significant in a small number of countries, including New Zealand, they are in the minority, and go against the general consensus shared by a majority of the research. In individual- or micro-level studies, the key variables should be a partisanship variable, and a class or income control; a religious control variable is not relevant for New Zealand.

This thesis continues as follows: in the next chapter, I detail the methodology I employed for my macro-level study, including how I created my data set, and the modelling method I have undertaken. The chapter following then presents the results of the macro-level study. The following chapters present the methodology for my individual analysis, and the results and discussion of these in the context of the previous literature.

Chapter 2: Methodology, macro-level study

In this chapter I discuss the variables chosen for my analysis, how I have built my data set, and the model I have used.

The dependent variable

The idea of a popularity function is to measure how the popularity of the government fluctuates relative to changes in a country's economic performance. How do we measure government popularity? As detailed in the previous chapter, while the literature was near unanimous in its adoption of opinion polls undertaken by third parties, there was no consensus on how exactly to specify the dependent variable. Should we look at the actual level of support for the incumbent? Or should we look at first changes, or some kind of weighted yearly average that places emphasis on recent results over those further back in the cycle? With no definitive answer on the variable to select, I chose the one that made the most sense. If the sanctioning theory of economic voting theorises that support for the government changes as economic conditions decline, or improve, then the obvious dependent variable is that of the *change* in government popularity. If the theoretical assumptions are correct, there is no need to take into account the vote of the opposition, as voters predominantly decide based on the performance of the incumbent, rather than the promises of the opposition. For this study, the incumbent was deemed to be the party that either held the majority of seats in the New Zealand House of Representatives outright, or, if part of a coalition of parties, was the party with the most seats in the governing coalition. As such, the incumbent is only ever the National Party or the Labour Party. I do, however, attempt to account for differences between entire coalitions and the majority power holder, something I will discuss further on in this chapter.

The figures themselves come from two sources. Between 1978 and 1994 the data comes from polling undertaken by the Heylen Research Centre. Between 1995 and 2015 the data comes from opinion polling undertaken by Colmar Brunton.¹⁶⁴ This time period was selected because of the availability of polling records and reliable macroeconomic data. Both sets of polling data have generally taken a sample of approximately 1000 New Zealanders, selected at random, and asked them, "If a general election were held today, which political party would you vote for?" Each survey then displays the percentage of respondents who expressed a desire to vote for each party. Neither survey, however, includes in the party totals the number of respondents who remained undecided. So while the total of all parties comes to 100%, it is important to remember that these are only the people who expressed a preference.¹⁶⁵ Unfortunately, the polling across the period examined has not been consistent. For much of the period covered by the Heylen Research Centre, polls were undertaken most months of the year. If polling had been undertaken every month in that period there would have been 192 data points, but the Heylen Research Centre leaves us with 186.

¹⁶⁴ Much of the polling undertaken by the Heylen Research Centre was commissioned by TVNZ for One News. The Heylen Research Centre went into liquidation in 1994, with Colmar Brunton taking over most of the polling for TVNZ after this time.

¹⁶⁵ While the reliability of the data the two survey companies provide is of clear significance for the reliability of my results, I will not quote verbatim the methodology employed by each company here, particularly as the methodology may have changed somewhat across the time period concerned. A recent copy of the methodology employed by Colmar Brunton can be found at Colmar Brunton, "One News Colmar Brunton Poll," Colmar Brunton, http://colmarbrunton.co.nz/images/160228_ONE_News_Colmar_Brunton_Poll_report_13-17_Feb_2016.pdf. 21 Feb. 2016. As none of the Heylen Research Centre data is digitised, a copy of the methodology employed in one of their more recent surveys can be found in the appendix of this thesis.

However, the figures only align so well when we average them. In some months, the Heylen Research Centre undertook three polls, usually in the month of an election; at other times, only one poll was undertaken for any one quarter. This is a trend that worsened under the polling of Colmar Brunton, with some periods showing a gap of four months between opinion polls, but a glut of polls in election years. This becomes a problem when trying to match the opinion polls to the economic data. All of New Zealand's economic data is released as quarterly figures, as opposed to many European countries where data is available in monthly figures. Statistical modelling requires that the data all aligns for each data point, thus the opinion poll numbers had to form quarterly values. To do this, I simply averaged the poll results for each party over the quarter. In some quarters this meant that the figure was based on seven polls, while in other quarters it was based on only one. There were also two quarters where no polling was undertaken and so could not be included in the data set. As we are looking at the change in popularity, our dependent variable becomes the percentage change in incumbent popularity from one quarter to the next.

The other key qualification to make about the organisation of the data is in relation to elections. As well as opinion poll figures, I have chosen to rely on elections in the instance of a new party taking power. In this respect, the first point of the data set is the percentage change between the actual vote of the party elected to government and the first quarter following the quarter in which the election occurred. When a government won successive terms, the model ignores the new election result, instead opting for the continued use of change between opinion poll quarters. This method has been employed because if the sanctioning theory of economic voting is correct, then economic performance must be relatively good in order for the incumbent to win again, and thus there was no need to re-start with the new election baseline.

The timing of the election also affects the way in which opinion poll data aligns with the economic variables. For example, if an election was held in the first month of a quarter, the outgoing government's last data point will be the previous quarter. If, however, an election took place in the second two months of the quarter, it was assumed that the quarter's economic effects will have begun to have been felt by the electorate. Any polls taken in that quarter, but before the election, were averaged into a data point with that quarter's economic data. The same is true for new governments. If the election took place in the first month of the quarter, then the election results were aligned with the previous quarter's economic data, the assumption being that the economic effects measured in the new quarter had not yet begun to have an effect on the electorate. If the election happened in the second two months of the quarter, then the election result was aligned with that quarter's economic data.

The independent variables

Government popularity is correlated against a number of economic variables. The literature had slightly more agreement on these variables, with the general consensus being that some kind of unemployment, inflation, and real income measures were the best variables to test the economic voting thesis. These also seemed to make the most sense for New Zealand. The available data from both the wider questions asked by the Heylen Research Centre and the National Research Bureau, and the individual-level data in the early years of the New Zealand Election Study (NZES), confirmed the importance New Zealanders placed on the economy, and unemployment in particular. The Heylen Research Centre often asked the question, "What would you say is the most urgent problem facing the country at the present time?" As shown in Figure 1, the economy in general, and

unemployment more specifically, was deemed to be a much bigger problem than inflation for most of the period.¹⁶⁶ Furthermore, the percentage of respondents who named a non-economic issue as the most urgent problem facing New Zealand across the same time period was remarkably low: see Figure 2. The National Research Bureau polling also suggests that unemployment has been the most significant issue voters are concerned about, with data from the late 1980s consistently showing over 50% of respondents viewing unemployment as the most important problem facing New Zealand, compared to the only 5% that named inflation.¹⁶⁷

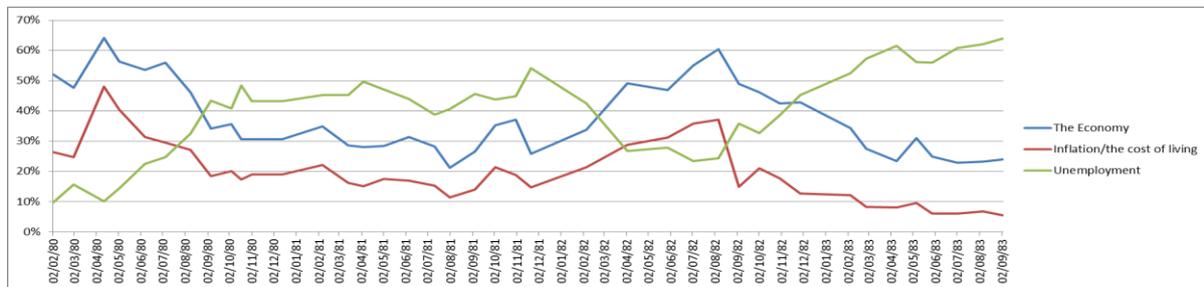


Figure 1. Heylen Research Centre, "What would you say is the most urgent problem facing the country at the present time?" Economic responses

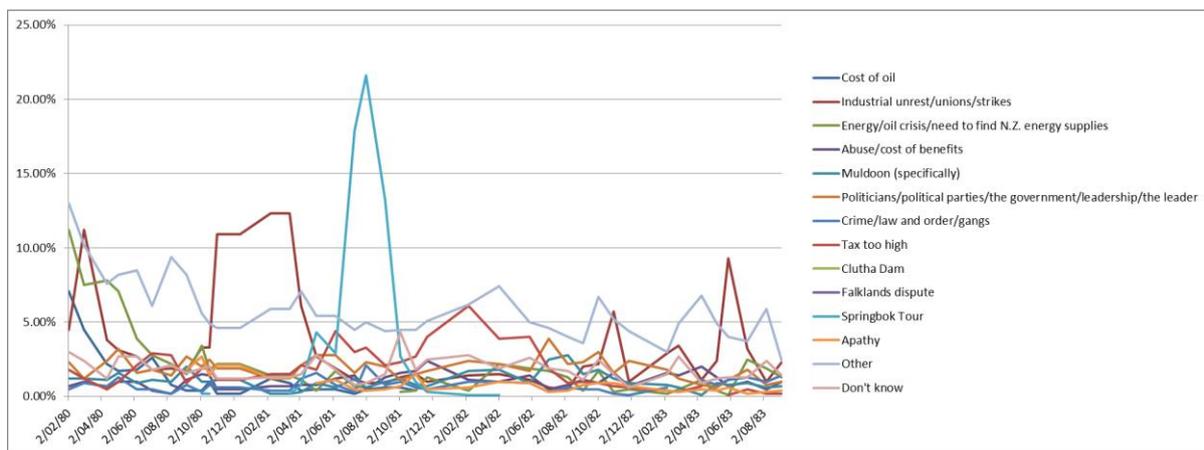


Figure 2. Heylen Research Centre, "What would you say is the most urgent problem facing the country at the present time?" Non-economic responses

More recently, work carried out as part of the NZES shows that unemployment was of far more concern than inflation in survey data for the 1990 and 1993 elections.¹⁶⁸ Overall, it becomes clear in the New Zealand case, at least in the 1980s and early 1990s, unemployment was the key economic issue New Zealanders were concerned about. While considerably less important to New Zealanders than unemployment, the predominance of inflation at times as an issue they were concerned about made this a likely second variable. While real wages never featured significantly in any of the main problems that respondents listed, it has been utilised frequently in overseas cases. These theorists

¹⁶⁶ The limited years the graph covers are a result of the inconsistency with which the Heylen Research Centre asked the question, as well as an inability to find an archived repository of all the collated Heylen Research Centre surveys.

¹⁶⁷ Cited in Vowles, "Values, Perceptions, and Voting Choice," 66.

¹⁶⁸ The survey quoted in the text asked participants whether "if the government had to choose between keeping down inflation, or getting down unemployment, to which do you think it should give the highest priority?" see "Values, Perceptions, and Voting Choice," 66.

argue that real income is important not because it is a measure that shows how individuals' 'pocket books' are performing, but because it is an indicator of the health of the entire economy; real wages increase when the economy is doing well, and decrease in bad times.¹⁶⁹ Real income, therefore, becomes my third independent variable. However, what is also clear is that in some years voters are far less concerned about the economy than in others. For example, the 2002 NZES revealed that the number of respondents identifying the economy as being the most important issue had dropped to less than 5%.¹⁷⁰ This last point does not make the popularity function redundant. Rather, it highlights how a strong, well performing economy can lead voters to look for other issues of contention, though the economic voting hypothesis would suggest that incumbents are unlikely to be voted out over such issues.¹⁷¹

How each independent variable was measured

Inflation is measured as the percentage change in the seasonally adjusted Consumer Price Index (CPI) from quarter to quarter. The data comes from the official Statistics New Zealand website, and is released on a quarterly basis to the public.¹⁷² The unemployment rate was also turned into a changed based variable. The variable became the percentage change in the unemployment rate from quarter to quarter. Unfortunately, an official quarterly unemployment figure has been available only since 1986.¹⁷³ Prior to this, unemployment figures were collected by the Department of Labour. While Ursprung quotes a monthly supplement published by the Department of Labour as the source of his figures, it appears that this source is no longer available. Since Ursprung's study, the Department of Labour has merged into the Ministry of Business, Innovation and Employment (MBIE). Official Information Act requests failed to yield any results, with my request being diverted from the MBIE to the Ministry of Social Development. This eventually concluded with a response claiming the files did not exist. From Ursprung's work, we know that the files did exist; whether the records were not kept in the merger, or whether I simply found an employee who was unwilling to expend the effort to look properly is inconsequential, the result is the same. Instead, I have had to rely on the New Zealand Official Yearbooks.¹⁷⁴ However, these yearbooks, while usually providing the monthly number of unemployed, generally only provided a yearly estimate of the total labour

¹⁶⁹ Hibbs, in particular, sees real income as the most important economic indicator. See Hibbs, "Obama's Reelection Prospects under "Bread and Peace" Voting in the 2012 US Presidential Election."

¹⁷⁰ Jack Vowles, "Estimating Change During the Campaign," in *Voter's Veto: The 2002 Election in New Zealand and the Consolidation of Minority Government*, ed. Peter Aimer, Jack Vowles, Susan Banducci, Jeffrey Karp, and Raymond Miller (Auckland: Auckland University Press, 2004), 42.

¹⁷¹ A point raised in Sophia Walshe, "Social Determinants of Voter Choice in the 2002 New Zealand General Election: An Electoral-Level Study" (Master's diss., University of Otago, 2006), 5.

¹⁷² See Statistics New Zealand, "CPI All Groups for New Zealand, Seasonally Adjusted (Qrtly-Mar/Jun/Sep/Dec)," <http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=ceb03c84-87fd-4839-bbfe-28a6ba2042e8>. Accessed, 15 August 2015.

¹⁷³ The unemployment rate I use for the 1986-2015 period is calculated as the number of official unemployed as a percentage of the total labour force. All data comes from Statistics New Zealand; see "Household Labour Force Survey, the Jobless by Sex by Type (Qrtly-Mar/Jun/Sep/Dec)," Statistics New Zealand, <http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=0f234e74-af07-464e-aff5-3a453eb983ce>; "Household Labour Force Survey, Employed Persons, Full & Part-Time Status by Sex (Qrtly-Mar/Jun/Sep/Dec)," Statistics New Zealand, <http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=f4d0ce4a-724c-48d7-a392-4d1e0051801e>. Accessed 15 August 2015. This provides slightly different numbers from the unemployment rate quoted in the official data set, as their figure is rounded to one decimal place, rather than two, as is the case with mine.

¹⁷⁴ All available yearbooks can be found at "Yearbook Collection: 1893-2012," Government Printer, <http://www.stats.govt.nz/yearbooks>. Accessed 20 October 2016.

force figure between 1978 and 1985. To construct an unemployment rate, I took the total labour force estimate at Y_1 , and subtracted it from the total labour force estimate at Y_2 , and averaged the increase or decrease over the four quarters. I turned the monthly unemployment totals into quarterly figures by averaging them. The unemployment rate then became the number of unemployed as a percentage of the labour force in each quarter. Obviously, this method is problematic, lacking any ability to account for fluctuations in the labour force that may or may not have occurred within a year. Unfortunately, it was the best that was possible with the data available. I will come back to how this affects the validity of my results further on in the chapter.

My third variable aimed to test the effect of real income. This was measured as the quarterly gross average weekly wage increase, deflated by the rate of inflation. Again, all data came from official statistics provided by Statistics New Zealand.¹⁷⁵ As the value of real income is dependent on the value of another independent variable, the rate of inflation, I tested to check whether there was any multicollinearity between the two variables. The tolerance in the model was fine, able to handle both variables without causing any problems for its validity. Unfortunately, the time period for which the income variable is available is significantly shorter than for both unemployment and inflation, Statistics New Zealand holding data only for 1989 onwards. Therefore I ran the model with two different data sets. The first model runs from 1978 to 2015 and includes the unemployment and inflation series. The second model runs from 1989 to 2015 and includes all three economic variables. As by 1989 the unemployment series available becomes the official one provided by Statistics New Zealand, running this second model removes any possible misspecification of the unemployment variable that may be apparent due to the way in which I constructed the data set prior to 1986.

Left versus right differentiation

As discussed in the literature review, a number of authors suggested that the position of governments on the left–right spectrum may affect which economic factors they are held accountable for. This resulted from both the traditional support base of left-leaning parties compared to right-leaning parties, and assumptions about the relationship between inflation and unemployment. Economists theorised that you could have either low unemployment or low inflation, but not both, a relationship visualised as the Phillips Curve. It later turned out that economists were wrong: you could indeed have high unemployment and rampant inflation. However, for much of the period examined in this investigation, the Phillips Curve was considered to be functional. As such, there were a number of assumptions made by policy makers, and voters, about what economic policy could accomplish, and what to target. Left-leaning governments have traditionally been supported by lower-income wage earners, whose main economic concerns have been related to unemployment. Governments of the left may be more heavily punished by voters than those of the right if they allow unemployment to climb. Conversely, right-leaning voters have been more concerned about inflation, and may punish right-leaning governments more severely for increases in inflation compared to unemployment.

In New Zealand there was some evidence from the individual-level data to suggest that this effect may be present. Early NZES studies showed that at the 1993 election, National Party voters were

¹⁷⁵ "Earnings and Employment Survey, Average Weekly Earnings (FTEs) by Industry (ANZSIC06) and Sex (Qrtly-Mar/Jun/Sep/Dec)," Statistics New Zealand, <http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=c3277092-5379-4b95-82d6-691eaa311e07>. Accessed 15 July 2015.

split evenly between those who viewed inflation as most important, and those who chose unemployment as the most important. In contrast, Labour voters placed far more emphasis on unemployment, relatively few of them specifying inflation as their bigger concern.¹⁷⁶ Later, in the 2011 NZES, we see that Labour voters were far more likely to be concerned with losing their jobs than were National voters, again suggesting left-leaning voters are more concerned about unemployment rates than are their National counterparts.¹⁷⁷ More broadly, we see that left-leaning voters may just be less concerned about the economy vis-à-vis other issues. The 1999 NZES suggested that of those who specified the economy as the most important issue, 52% were National voters, compared to the 17% who voted Labour.¹⁷⁸

To determine whether this difference existed in New Zealand I differentiated between the incumbent governments according to whether they were Labour- or National-led.¹⁷⁹

Testing under coalition government

The literature suggested that when accountability lines become blurred, it is harder to find a link between economic conditions and government support.¹⁸⁰ This was particularly the case in coalition governments in which voters find it hard to determine which party is the most to blame for poor economic conditions. In the previous chapter I detailed why New Zealand's coalition system is unlikely to result in dilution of blame for economic problems. However, it still made sense to test to see whether this was the case. Therefore I also modelled the total popularity of the governing coalition between 1996 and 2015 to compare this to the level of support for the major party in the government and the economic conditions during the same period.¹⁸¹ The dependent variable in these models became the percentage change in support of the entire governing coalition from quarter to quarter.¹⁸²

¹⁷⁶ Vowles, "Values, Perceptions, and Voting Choice," 66.

¹⁷⁷ "The 2011 Election through a Wide-Angle Lens," in *The New Electoral Politics in New Zealand: The Significance of the 2011 Election* ed. Jack Vowles (Wellington: Institute for Governance and Policy Studies, 2014), 223.

¹⁷⁸ "Did the Campaign Matter?," in *Proportional Representation on Trial: The 1999 New Zealand General Election and the Fate of MMP*, ed. Peter Aimer Jack Vowles, Jeffrey Karp, Susan Banducci, Raymond Miller, and Ann Sullivan (Auckland: Auckland University Press, 2002), 23.

¹⁷⁹ Classifying Labour as a party of the left, and National as a party of the right, is clearly problematic. The Labour Government of David Lange instigated a period of right-wing neo-liberal reforms which were far to the right of anything the National Party was considering at the time. However, I have decided to maintain their traditional identification as a party of the left, and National as a party of the right as their traditional support bases still stood by core Labour and National values. For example, Labour voters were still considered to be more concerned about unemployment than inflation, even during the Rogernomics era.

¹⁸⁰ Particularly, Powell and Whitten, "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context," and Whitten and Palmer, "Cross-National Analyses of Economic Voting."

¹⁸¹ Since New Zealand adopted the MMP system in 1996, most governments have been formed by a single party with a supply and support agreement with a smaller party. Full coalition agreements have been used less often, with both the major and minor parties seeming to believe that they are better off outside a formal coalition. To provide an accurate comparison between the effect on coalition governments and the majority party, a data set was created where the dependant variable of the percentage change in a single-party majority began at the same time as the coalition data.

¹⁸² The governing coalition includes parties that were part of a formal coalition agreement, and the less formal support and supply agreements.

Lagged data

As discussed in the literature review, much of the economic voting literature discusses the presence of a lagged relationship. It was hypothesised that economic data at T_1 may affect voter behaviour at T_2 . There were differing views on what time period was involved in this; however, there was a consensus that voters are relatively myopic and retrospective, not being able to account for events that happened any earlier than 12 months in the past. As my data set is presented in quarterly changes, it made sense to create a lag structure that tested lags at three months, six months, nine months, and twelve months, to determine if there was a delayed effect between the electorate feeling economic effects, and reacting to them through polling. Both leading single party results and coalition governments were tested against lagged economic data.

Bust is bad, but boom is not particularly good

Bloom and Price, and Mueller, concluded that only negative results affected the popularity of incumbents.¹⁸³ While much of the later work failed to confirm this hypothesis, an initial attempt was made to test this theory for the available data in New Zealand. Unfortunately, this was not possible. Too many cases were removed from the model, resulting in an inadequate sample size, and depleting the degrees of freedom to an unacceptable level.

What is not included in the model

Partisanship

Partisanship is an important aspect affecting voter behaviour. Voters who identify with a particular party – through membership or otherwise – are far more likely to remain with that party, regardless of whether economic conditions have improved or deteriorated. Elections are decided not by those voters who, due to party alignment or various other reasons, remain steady with their party of choice, but rather the swing voters. My model measures changes in vote, and partisanship is not relevant to the model. As Paldam argues, what is relevant is that there seems to be “gross movements of 15 percent to 25 percent of the voters between the parties at the typical election in a democracy,” and it is this what the popularity function is measuring.¹⁸⁴

Political variables

At no point does my model account for non-economic political variables. That is not to say that this study assumes that non-economic variables have no effect; one only has to look at significant events such as the 1981 Springbok Tour, or more recently, the National Party announcement in 2010 that they would open up protected conservation land for mining, to see that non-economic issues are of key importance to the public.¹⁸⁵ Rather, this study assumes that economic concerns, or the economic well-being of citizens, have been the most important, or at the very least the most

¹⁸³ Howard S. Bloom and H. Douglas Price, "Voter Response to Short-Run Economic Conditions: The Asymmetric Effect of Prosperity and Recession," *The American Political Science Review* 69, no. 4 (1975); Mueller, "Presidential Popularity from Truman to Johnson."

¹⁸⁴ Martin Paldam, "How Robust Is the Vote Function? A Study of Seventeen Nations over Four Decades," in *Economics and Politics: The Calculus of Support*, ed. Helmut Norpoth, Michael S. Lewis-Beck and Jean-Dominique Lafay (Ann Arbor: University of Michigan Press, 1991), 12. See also "Are Vote and Popularity Functions Economically Correct?," 51.

¹⁸⁵ For example, see New Zealand Press Association, "Huge Protest Says No to Mining on Conservation Land," *New Zealand Herald*, http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10642083. Accessed 10 August 2015.

consistent, factor in voter decision-making between 1978 and 2015. In studies in the United States in particular, the various dummy variables used have been for issues such as, 'rally around the flag,' the idea that in a foreign policy crises citizens will rally around the president, or, to show the perceived effect that war, or the death of soldiers, has on popular support.¹⁸⁶ While these dummy variables make perfect sense in the US context, it is less clear what variables could, or should, be chosen for a model concerning New Zealand. Attempts to factor in non-economic issues have been undertaken in other studies. For example, Ursprung utilised dummy variables 1 or 0 to identify when a number of political variables were present.¹⁸⁷ However, these variables were chosen in an ad-hoc manner and, realistically, without polling data that confirms their importance, this is the only way in which political variables can be selected.¹⁸⁸ This is problematic for two main reasons. Firstly, if one selects dummy variables to add based on perceived blips in the polls, the end model becomes far more likely to fit the economic data purely because a variable has been chosen to 'fix' an unexpected rise in the polls.¹⁸⁹ The second problem is when two 'important' non-economic events occur at the same time. For example, in the middle of 1987 the All Blacks won the inaugural Rugby World Cup and the government signed into law the New Zealand Nuclear Free Zone, Disarmament, and Arms Control Act. If there was a jump in the polls, which one was the most significant, or actually had an effect? If one is to select variables on an ad-hoc basis, where does one stop? For example, should a variable be inserted for each international rugby game that the All Blacks play, with corresponding coding for a win, leading to an increase in support for the government, or for a loss, where voters become more likely to disapprove of government performance? Achen and Bartel have suggested that events as obscure as a run of shark attacks, floods, or droughts, can have an effect on an incumbent, despite their inability to do anything about those variables.¹⁹⁰ Local college football team wins or losses also seemed to have an effect on voter behaviour at both presidential and Senate elections in the United States.¹⁹¹ The point of explaining this is not to show that popularity functions are flawed, but rather to show why, without corresponding data to insert political variables as an actual value, rather than as a dummy variable, their presence can cause more problems than it solves.¹⁹² This is

¹⁸⁶ For example, see Mueller, "Presidential Popularity from Truman to Johnson"; Hibbs, Rivers, and Vasilatos, "On the Demand for Economic Outcomes: Macroeconomic Performance and Mass Political Support in the United States, Great Britain, and Germany."; Hibbs, "Obama's Reelection Prospects under "Bread and Peace" Voting in the 2012 US Presidential Election."; and Bartels and Zaller, "Presidential Vote Models: A Re-count."

¹⁸⁷ Heinrich W. Ursprung, "Macroeconomic Performance and Government Popularity in New Zealand," *Comparative Political Studies* 16, no. 4 (1984).

¹⁸⁸ The data I have utilised in Figure 2 would enable us to conclude that the Springbok Tour was a significant factor in electorate decision-making, and thus warrant possible inclusion in the model. Unfortunately, the years shown in Figure 2 are the only ones I have available. Since I did not have the data for any other time period, I was unable to construct a model utilising the data from 1980-83.

¹⁸⁹ An issue raised by, among others, Frey and Schneider, "Economic and Personality Determinants of Presidential Popularity"; and Paldam, "How Robust Is the Vote Function?: A Study of Seventeen Nations over Four Decades," 13.

¹⁹⁰ Christopher H. Achen, "Blind Retrospection: Why Shark Attacks Are Bad for Democracy."; see also Andrew Healy and Neil Malhotra, "Retrospective Voting Reconsidered," *Annual Review of Political Science* 16, no. 1 (2013): 296.

¹⁹¹ Andrew J. Healy, Neil Malhotra, and Cecilia Hyunjung Mo, "Irrelevant Events Affect Voters' Evaluations of Government Performance," *Proceedings of the National Academy of Sciences* 107, no. 29 (2010).

¹⁹² Paldam, "How Robust Is the Vote Function? A Study of Seventeen Nations over Four Decades," 13-14.

not an outlying position, since much of the other literature employs one key political variable, or none at all.¹⁹³

Cyclical relationships

A number of the models discussed in the previous chapter have used a dummy variable to account for perceived political cycles. That is, theorists have assumed that the popularity of a president or party naturally declines over time due to, amongst other things, a “coalition of minorities.”¹⁹⁴ Others have perceived the presence of a honeymoon cycle, in which for the first period of a candidate’s term the public will give the newly elected government time to settle in, before judging them too harshly. Much thought was given to the inclusion of such variables; however an examination of the data suggested that if either situation does exist in the New Zealand context, it is not obviously apparent across all elected governments. For example, the current National Party-led government of Prime Minister John Key has maintained relatively high poll numbers across three-and-a-half terms, and if the dummy cannot apply to one government, then it is hard to justify its inclusion for others. Furthermore, while there is evidence to suggest that the media, at least, believes politicians to receive a honeymoon period in New Zealand, it is hard to deduce how one might decide how long this period lasts for; often when the media describe the honeymoon period as being over, it is linked to a random event that happened by chance at a certain time.¹⁹⁵ As this is not consistent across governments, it made little sense to attempt to insert it, nor to add it in an ad-hoc way depending on how each government fared in the polls, or when the media decided the honeymoon period had ended.

The model

What we are left with is a relatively simple model that aims to explore how the change in government popularity is affected by the change in the CPI, the change in unemployment, and the change in the real wage rate. The variables were entered into a general linear model and run against each other, testing for their effect on the dependent variable, and how the independent variables affected one another.

The following chapter details the results of this study. The thesis then moves onto my micro-level examination of the economic vote.

¹⁹³ For example, see Kiewiet and Udell, "Twenty-Five Years after Kramer: An Assessment of Economic Retrospective Voting Based Upon Improved Estimates of Income and Unemployment"; and Hibbs, "Obama's Reelection Prospects under "Bread and Peace" Voting in the 2012 UD Presidential Election."

¹⁹⁴ A concept presented by Mueller. He argued that across a President’s term, large numbers of small minority groups will inevitably be alienated. These will eventually form a mass where their combined discontent can swing the vote. See Mueller, "Presidential Popularity from Truman to Johnson."

¹⁹⁵ The media often report on political events saying things such as ‘the honeymoon period is certainly over.’ For example, "Loose Cannons Signal an End to the Honeymoon Period," *New Zealand Herald*, http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10572746 Accessed 10 Oct. 2015; "Consensual Politics," *The Press*, Fairfax Media, <http://www.stuff.co.nz/the-press/opinion/5939365/Editorial-Consensual-politics>. Accessed 10 Oct. 2015.

Chapter 3: Macro-level results

In this chapter I detail the results of my macro-level analysis of government popularity in New Zealand and its link, or lack thereof, to macroeconomic conditions. Firstly, I present tables showing results from the models where the dependent variable was the percentage change in popularity of the main party in government, Tables 1-40. These tables are separated into their corresponding lag periods; non-lagged, three months, six months, nine months, and twelve months. Each lag period shows test of between subject effects tables, measuring the significance of the economic variables on the dependent variable, followed by parameter estimates tables, showing the estimated effect of the independent variables on the dependent variable. In each lag I present full factorial equations that measure the interactions between the independent variables as well as their effect on the dependent variable. I then present tables, measuring the relationship without the interactions between the independent variables. This has been done because, as will be seen, in most of the models, interactions between the independent variables were not significant, and their inclusion may hide the true effect of each variable. As discussed in my methodology chapter, real wage rates were available for a much shorter period than my other independent variables, and as such, had to be run in a separate model. Each section then also includes tables detailing a full factorial model with the real wage rate, unemployment, and inflation, as well as a model without interactions.

Secondly, I provide tables (41-60) showing results from the models that aimed to test macroeconomic effects on coalition governments. In these models the dependent variable is the percentage change in support for the entire governing coalition.¹⁹⁶ These results are presented in the same way as for the single-party majority; however, they do not include tables measuring the interactions between the independent variables, as the degrees of freedom were depleted to an unacceptable level with the more limited number of data points available.¹⁹⁷ Further, to ensure an accurate comparison, these tables are presented in comparison to models that use the percentage change in the single-party majority as the dependent variable, but for the same time period that is available for the coalition data, that is, from the first quarter of 1997 onwards.

All tables listed have outliers removed using the 4/n Cook's distance rule. This was initiated as some of the equations were suggesting highly significant correlations, but on closer examination it was found these were the result of only one or two data points, thus concealing the general trend. At no point does the exclusion of outliers make a model that was insignificant, significant. I have confidence then, that the removal of outliers is not 'cherry-picking' and it actually makes it harder to achieve a significant fit.

In the following tables, the economic variables are as follows:

X1 = Rate of inflation (percentage change in the CPI index from quarter to quarter)

X2A = Percentage change in the unemployment rate from quarter to quarter

X3 = The real wage rate: the change in the average weekly wage rate each quarter, deflated by the rate of inflation

¹⁹⁶ 'Governing coalition' refers to all parties which are either under a formal coalition agreement, or the looser support and supply agreements that have characterised most mixed governments in New Zealand.

¹⁹⁷ This is purely the result of coalition governments only becoming commonplace in New Zealand since the October 1996 general election.

Non-lagged inflation and unemployment

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 219.962 ^a | 6 | 36.660 | .577 | .748 |
| Intercept | 305.428 | 1 | 305.428 | 4.807 | .030 |
| PARTY | 1.056 | 1 | 1.056 | .017 | .898 |
| X1 | 175.907 | 1 | 175.907 | 2.769 | .099 |
| X2A | 38.173 | 1 | 38.173 | .601 | .440 |
| PARTY * X1 | .057 | 1 | .057 | .001 | .976 |
| PARTY * X2A | 8.982 | 1 | 8.982 | .141 | .708 |
| X1 * X2A | 26.021 | 1 | 26.021 | .410 | .523 |
| Error | 8259.690 | 130 | 63.536 | | |
| Total | 8629.290 | 137 | | | |
| Corrected Total | 8479.651 | 136 | | | |

a. R Squared = .026 (Adjusted R Squared = -.019)

Table 1: Anova table: non-lagged inflation and unemployment

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.943 | 1.136 | -1.710 | -4.191 | .305 |
| [PARTY=L] | -.242 | 1.879 | -.129 | -3.960 | 3.475 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | .882 | .676 | 1.304 | -.456 | 2.220 |
| X2A | .068 | .164 | .417 | -.256 | .392 |
| [PARTY=L] * X1 | -.031 | 1.022 | -.030 | -2.052 | 1.991 |
| [PARTY=N] * X1 | 0 ^a | . | . | . | . |
| [PARTY=L] * X2A | .059 | .157 | .376 | -.252 | .370 |
| [PARTY=N] * X2A | 0 ^a | . | . | . | . |
| X1 * X2A | -.046 | .072 | -.640 | -.190 | .097 |

a. This parameter is set to zero because it is redundant.

Table 2: Parameter Estimates table: non-lagged inflation and unemployment

Non-lagged inflation and unemployment; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 173.651 ^a | 3 | 57.884 | .927 | .430 |
| Intercept | 294.999 | 1 | 294.999 | 4.724 | .032 |
| PARTY | .315 | 1 | .315 | .005 | .943 |
| X1 | 144.239 | 1 | 144.239 | 2.310 | .131 |
| X2A | 13.867 | 1 | 13.867 | .222 | .638 |
| Error | 8306.001 | 133 | 62.451 | | |
| Total | 8629.290 | 137 | | | |
| Corrected Total | 8479.651 | 136 | | | |

a. R Squared = .020 (Adjusted R Squared = -.002)

Table 3: Anova table: non-lagged inflation and unemployment; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.937 | 1.032 | -1.877 | -3.978 | .104 |
| [PARTY=L] | -.098 | 1.383 | -.071 | -2.834 | 2.637 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | .741 | .488 | 1.520 | -.223 | 1.706 |
| X2A | .035 | .075 | .471 | -.113 | .184 |

a. This parameter is set to zero because it is redundant.

Table 4: Parameter Estimates table: non-lagged inflation and unemployment; interactions omitted

Non-lagged inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 631.569 ^a | 10 | 63.157 | .878 | .557 |
| Intercept | 6.539 | 1 | 6.539 | .091 | .764 |
| party | 98.881 | 1 | 98.881 | 1.375 | .244 |
| X1 | 13.564 | 1 | 13.564 | .189 | .665 |
| X2A | 17.683 | 1 | 17.683 | .246 | .621 |
| X3 | 184.391 | 1 | 184.391 | 2.565 | .113 |
| X1 * X2A | .814 | 1 | .814 | .011 | .916 |
| X1 * X3 | 78.742 | 1 | 78.742 | 1.095 | .298 |
| party * X1 | 122.729 | 1 | 122.729 | 1.707 | .195 |
| X2A * X3 | 26.330 | 1 | 26.330 | .366 | .547 |
| party * X2A | 67.030 | 1 | 67.030 | .932 | .337 |
| party * X3 | 4.811 | 1 | 4.811 | .067 | .797 |
| Error | 6039.492 | 84 | 71.899 | | |
| Total | 6835.739 | 95 | | | |
| Corrected Total | 6671.062 | 94 | | | |

a. R Squared = .095 (Adjusted R Squared = -.013)

Table 5: Anova table: non-lagged inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.976 | 1.806 | -1.094 | -5.567 | 1.615 |
| [party=L] | 5.247 | 4.474 | 1.173 | -3.650 | 14.144 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | 2.746 | 3.108 | .883 | -3.434 | 8.926 |
| X2A | .016 | .276 | .059 | -.532 | .564 |
| X3 | -3.529 | 2.263 | -1.560 | -8.028 | .971 |
| X1 * X2A | .040 | .378 | .106 | -.711 | .792 |
| X1 * X3 | 3.186 | 3.044 | 1.047 | -2.868 | 9.239 |
| [party=L] * X1 | -7.636 | 5.845 | -1.307 | -19.260 | 3.987 |
| [party=N] * X1 | 0 ^a | . | . | . | . |
| X2A * X3 | .104 | .172 | .605 | -.238 | .447 |
| [party=L] * X2A | .259 | .269 | .966 | -.275 | .793 |
| [party=N] * X2A | 0 ^a | . | . | . | . |
| [party=L] * X3 | -.784 | 3.029 | -.259 | -6.808 | 5.241 |
| [party=N] * X3 | 0 ^a | . | . | . | . |

a. This parameter is set to zero because it is redundant.

Table 6: Parameter Estimates table, non-lagged inflation, unemployment, and real income

Non-lagged inflation, unemployment, and real income; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 401.061 ^a | 4 | 100.265 | 1.499 | .209 |
| Intercept | 13.189 | 1 | 13.189 | .197 | .658 |
| X1 | 1.780 | 1 | 1.780 | .027 | .871 |
| X2A | 229.906 | 1 | 229.906 | 3.437 | .067 |
| X3 | 223.916 | 1 | 223.916 | 3.348 | .071 |
| party | 12.953 | 1 | 12.953 | .194 | .661 |
| Error | 6086.307 | 91 | 66.882 | | |
| Total | 6641.985 | 96 | | | |
| Corrected Total | 6487.368 | 95 | | | |

a. R Squared = .062 (Adjusted R Squared = .021)

Table 7: Anova table: non-lagged unemployment and real income; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.139 | 1.485 | -.767 | -4.090 | 1.811 |
| X1 | .349 | 2.139 | .163 | -3.900 | 4.598 |
| X2A | .205 | .110 | 1.854 | -.015 | .424 |
| X3 | -2.357 | 1.288 | -1.830 | -4.916 | .202 |
| [party=L] | .821 | 1.866 | .440 | -2.886 | 4.528 |
| [party=N] | 0 ^a | . | . | . | . |

a. This parameter is set to zero because it is redundant.

Table 8: Parameter Estimates table: non-lagged unemployment and real income; interactions omitted

As can be seen in the above tables, none of the non-lagged tables showed any significant relationships at the 95% confidence level or higher. This was not entirely unexpected, with much of the literature discussed in the review chapter determining that some kind of lag was required before an effect would be detected. The next section shows results from the models where economic data was lagged by three months.

Three-month lag, inflation and unemployment

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 1000.375 ^a | 6 | 166.729 | 2.532 | .024 |
| Intercept | 52.498 | 1 | 52.498 | .797 | .374 |
| Party | 17.075 | 1 | 17.075 | .259 | .611 |
| X1 | .004 | 1 | .004 | .000 | .994 |
| X2A | 594.720 | 1 | 594.720 | 9.033 | .003 |
| Party * X1 | 61.505 | 1 | 61.505 | .934 | .336 |
| Party * X2A | 19.383 | 1 | 19.383 | .294 | .588 |
| X1 * X2A | 60.987 | 1 | 60.987 | .926 | .338 |
| Error | 8558.802 | 130 | 65.837 | | |
| Total | 9735.423 | 137 | | | |
| Corrected Total | 9559.177 | 136 | | | |

a. R Squared = .105 (Adjusted R Squared = .063)

Table 9: Anova table: three-month lag, inflation and unemployment

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.347 | 1.167 | -1.154 | -3.657 | .962 |
| [Party=L] | .977 | 1.918 | .509 | -2.818 | 4.771 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .501 | .691 | .725 | -.865 | 1.867 |
| X2A | -.417 | .160 | -2.605 | -.734 | -.100 |
| [Party=L] * X1 | -.994 | 1.028 | -.967 | -3.028 | 1.040 |
| [Party=N] * X1 | 0 ^a | . | . | . | . |
| [Party=L] * X2A | .084 | .154 | .543 | -.222 | .389 |
| [Party=N] * X2A | 0 ^a | . | . | . | . |
| X1 * X2A | .069 | .072 | .962 | -.073 | .210 |

a. This parameter is set to zero because it is redundant.

Table 10: Parameter Estimates table: three-month lag, inflation and unemployment

When the economic data is lagged by three months, we find the unemployment variable becomes significant at the 95% mark. Further, the relationship is in the expected direction, with the parameter estimates table indicating that for every 1% increase in the unemployment variable, the government popularity variable declines by 0.417%. However, as the interaction between variables was not found to be important in the model, the following tables, 11 and 12 with interactions omitted, may provide a clearer picture of the effect of unemployment when lagged by three months.

Three-month lag, inflation and unemployment; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|--------|------|
| Corrected Model | 872.212 ^a | 3 | 290.737 | 5.219 | .002 |
| Intercept | 273.481 | 1 | 273.481 | 4.909 | .028 |
| Party | 15.091 | 1 | 15.091 | .271 | .604 |
| X1 | 97.613 | 1 | 97.613 | 1.752 | .188 |
| X2A | 827.040 | 1 | 827.040 | 14.846 | .000 |
| Error | 7297.972 | 131 | 55.710 | | |
| Total | 8449.411 | 135 | | | |
| Corrected Total | 8170.184 | 134 | | | |

a. R Squared = .107 (Adjusted R Squared = .086)

Table 11: Anova table: three-month lag, inflation and unemployment; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.654 | 1.024 | -1.615 | -3.680 | .372 |
| [Party=L] | -.683 | 1.313 | -.520 | -3.280 | 1.914 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .682 | .515 | 1.324 | -.337 | 1.701 |
| X2A | -.259 | .067 | -3.853 | -.392 | -.126 |

a. This parameter is set to zero because it is redundant.

Table 12: Parameter Estimates table: three-month lag, inflation and unemployment; interactions omitted

With interactions omitted, we see that the unemployment variable becomes more significant; however, its effect is diminished somewhat. For every 1% increase in the unemployment variable we see a decline in the government popularity variable by 0.259%.

Three-month lag, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 1750.925 ^a | 10 | 175.092 | 2.994 | .003 |
| Intercept | 142.754 | 1 | 142.754 | 2.441 | .122 |
| party | 2.712 | 1 | 2.712 | .046 | .830 |
| X1 | 30.718 | 1 | 30.718 | .525 | .471 |
| X2A | 1.461 | 1 | 1.461 | .025 | .875 |
| X3 | 333.041 | 1 | 333.041 | 5.694 | .019 |
| X1 * X2A | 228.800 | 1 | 228.800 | 3.912 | .051 |
| X1 * X3 | 223.477 | 1 | 223.477 | 3.821 | .054 |
| party * X1 | 2.045 | 1 | 2.045 | .035 | .852 |
| X2A * X3 | 3.445 | 1 | 3.445 | .059 | .809 |
| party * X2A | 151.159 | 1 | 151.159 | 2.584 | .112 |
| party * X3 | 1.584 | 1 | 1.584 | .027 | .870 |
| Error | 4796.043 | 82 | 58.488 | | |
| Total | 6657.520 | 93 | | | |
| Corrected Total | 6546.968 | 92 | | | |

a. R Squared = .267 (Adjusted R Squared = .178)

Table 13: Anova table: three-month lag, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -3.426 | 1.601 | -2.140 | -6.610 | -.241 |
| [party=L] | .854 | 3.965 | .215 | -7.034 | 8.742 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | 2.089 | 2.775 | .753 | -3.432 | 7.610 |
| X2A | -.237 | .230 | -1.029 | -.694 | .221 |
| X3 | 5.310 | 1.970 | 2.695 | 1.391 | 9.230 |
| X1 * X2A | -.634 | .320 | -1.978 | -1.271 | .004 |
| X1 * X3 | -4.979 | 2.547 | -1.955 | -10.047 | .088 |
| [party=L] * X1 | -.945 | 5.055 | -.187 | -11.002 | 9.112 |
| [party=N] * X1 | 0 ^a | . | . | . | . |
| X2A * X3 | .035 | .144 | .243 | -.251 | .321 |
| [party=L] * X2A | .393 | .245 | 1.608 | -.093 | .880 |
| [party=N] * X2A | 0 ^a | . | . | . | . |
| [party=L] * X3 | -.492 | 2.989 | -.165 | -6.437 | 5.453 |
| [party=N] * X3 | 0 ^a | . | . | . | . |

a. This parameter is set to zero because it is redundant.

Table 14: Parameter Estimates table: three-month lag, inflation, unemployment, and real income

In the shorter data series that includes a real income measure, as shown in Table 12, we see the unemployment variable lose its significance, while real income becomes significant. The Parameter Estimates table (13) indicates the relationship is in the expected direction and suggests it has a far more substantial effect than unemployment, shown in Table 11. For every 1% increase in real income levels, the model suggests a 5.31% increase in the government popularity variable. While the interactions approach significance at the 95% mark, they remain just outside. As a result, their inclusion, when not significant, may conceal the true effect of the other economic variables, as can be seen in Tables 14 and 15.

Three-month lag, inflation, unemployment, and real income; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|--------|------|
| Corrected Model | 1101.226 ^a | 4 | 275.307 | 5.014 | .001 |
| Intercept | 358.495 | 1 | 358.495 | 6.530 | .012 |
| Party | 6.034 | 1 | 6.034 | .110 | .741 |
| X1 | 158.138 | 1 | 158.138 | 2.880 | .093 |
| X2A | 1049.263 | 1 | 1049.263 | 19.111 | .000 |
| X3 | 308.980 | 1 | 308.980 | 5.628 | .020 |
| Error | 4941.322 | 90 | 54.904 | | |
| Total | 6253.441 | 95 | | | |
| Corrected Total | 6042.548 | 94 | | | |

a. R Squared = .182 (Adjusted R Squared = .146)

Table 15: Anova table: three-month lag, inflation, unemployment, and real income; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -3.427 | 1.311 | -2.614 | -6.031 | -.822 |
| [party=L] | -.569 | 1.715 | -.332 | -3.976 | 2.839 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | 3.043 | 1.793 | 1.697 | -.519 | 6.604 |
| X2A | -.428 | .098 | -4.372 | -.622 | -.233 |
| X3 | 2.899 | 1.222 | 2.372 | .471 | 5.327 |

a. This parameter is set to zero because it is redundant.

Table 16: Parameter Estimates table: three-month lag, inflation, unemployment, and real income; interactions omitted

With the interactions omitted, the real income variable remains significant, but its effect is reduced somewhat. For every 1% increase in real wages, the government popularity variable increases by 2.899%. The unemployment variable again becomes significant, but the relationship is significantly less than that for real income, with a 1% change in the unemployment variable leading to a decline of 0.428% in the government popularity variable. The next section covers the models where economic data was lagged by six months.

Six-month lag, inflation and unemployment

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 387.077 ^a | 6 | 64.513 | .763 | .600 |
| Intercept | 38.589 | 1 | 38.589 | .457 | .500 |
| Party | 27.123 | 1 | 27.123 | .321 | .572 |
| X1 | .154 | 1 | .154 | .002 | .966 |
| X2A | 94.859 | 1 | 94.859 | 1.122 | .291 |
| Party * X1 | 7.918 | 1 | 7.918 | .094 | .760 |
| Party * X2A | 28.634 | 1 | 28.634 | .339 | .562 |
| X1 * X2A | 1.745 | 1 | 1.745 | .021 | .886 |
| Error | 10986.309 | 130 | 84.510 | | |
| Total | 11411.544 | 137 | | | |
| Corrected Total | 11373.386 | 136 | | | |

a. R Squared = .034 (Adjusted R Squared = -.011)

Table 17: Anova table: six-month lag, inflation and unemployment

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|-------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -.126 | 1.319 | -.096 | -2.736 | 2.483 |
| [Party=L] | -1.347 | 2.377 | -.567 | -6.050 | 3.356 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .257 | .783 | .328 | -1.292 | 1.806 |
| X2A | .093 | .172 | .544 | -.246 | .433 |
| [Party=L] * X1 | -.452 | 1.476 | -.306 | -3.372 | 2.468 |
| [Party=N] * X1 | 0 ^a | . | . | . | . |
| [Party=L] * X2A | .101 | .173 | .582 | -.242 | .443 |
| [Party=N] * X2A | 0 ^a | . | . | . | . |
| X1 * X2A | -.011 | .079 | -.144 | -.168 | .145 |

a. This parameter is set to zero because it is redundant.

Table 18: Parameter Estimates table: six-month lag, inflation and unemployment

Six-month lag, inflation and unemployment; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 216.096 ^a | 3 | 72.032 | 1.115 | .345 |
| Intercept | 228.721 | 1 | 228.721 | 3.541 | .062 |
| Party | 51.412 | 1 | 51.412 | .796 | .374 |
| X1 | 29.848 | 1 | 29.848 | .462 | .498 |
| X2A | 97.004 | 1 | 97.004 | 1.502 | .223 |
| Error | 8397.579 | 130 | 64.597 | | |
| Total | 8796.352 | 134 | | | |
| Corrected Total | 8613.675 | 133 | | | |

a. R Squared = .025 (Adjusted R Squared = .003)

Table 19: Anova table: six-month lag, inflation and unemployment; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.180 | 1.101 | -1.072 | -3.359 | .999 |
| [Party=L] | -1.277 | 1.431 | -.892 | -4.109 | 1.555 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .375 | .552 | .680 | -.716 | 1.467 |
| X2A | .095 | .077 | 1.225 | -.058 | .248 |

a. This parameter is set to zero because it is redundant.

Table 20: Parameter Estimate table: six-month lag, inflation and unemployment; interactions omitted

Six-month lag, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 629.003 ^a | 10 | 62.900 | .602 | .808 |
| Intercept | 51.427 | 1 | 51.427 | .492 | .485 |
| party | 105.766 | 1 | 105.766 | 1.012 | .317 |
| X1 | 24.031 | 1 | 24.031 | .230 | .633 |
| X2A | 181.850 | 1 | 181.850 | 1.741 | .190 |
| X3 | 257.603 | 1 | 257.603 | 2.466 | .120 |
| X1 * X2A | 85.330 | 1 | 85.330 | .817 | .369 |
| X1 * X3 | 36.756 | 1 | 36.756 | .352 | .555 |
| party * X1 | 198.515 | 1 | 198.515 | 1.900 | .172 |
| X2A * X3 | 18.525 | 1 | 18.525 | .177 | .675 |
| party * X2A | 170.679 | 1 | 170.679 | 1.634 | .205 |
| party * X3 | 126.892 | 1 | 126.892 | 1.215 | .273 |
| Error | 9193.572 | 88 | 104.472 | | |
| Total | 9864.525 | 99 | | | |
| Corrected Total | 9822.575 | 98 | | | |

a. R Squared = .064 (Adjusted R Squared = -.042)

Table 21: Anova table: six-month lag, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -.775 | 2.093 | -.370 | -4.935 | 3.385 |
| [party=L] | 4.681 | 4.653 | 1.006 | -4.565 | 13.928 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | 2.663 | 3.210 | .830 | -3.715 | 9.041 |
| X2A | .249 | .315 | .790 | -.377 | .876 |
| X3 | -1.104 | 2.050 | -.539 | -5.177 | 2.969 |
| X1 * X2A | -.396 | .439 | -.904 | -1.268 | .475 |
| X1 * X3 | .900 | 1.517 | .593 | -2.115 | 3.915 |
| [party=L] * X1 | -7.867 | 5.707 | -1.378 | -19.208 | 3.474 |
| [party=N] * X1 | 0 ^a | . | . | . | . |
| X2A * X3 | -.067 | .159 | -.421 | -.383 | .249 |
| [party=L] * X2A | .383 | .300 | 1.278 | -.212 | .978 |
| [party=N] * X2A | 0 ^a | . | . | . | . |
| [party=L] * X3 | -3.707 | 3.364 | -1.102 | -10.393 | 2.978 |
| [party=N] * X3 | 0 ^a | . | . | . | . |

a. This parameter is set to zero because it is redundant.

Table 22: Parameter Estimates table: six-month lag, inflation, unemployment, and real income

Six-month lag, inflation, unemployment, and real income; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 125.164 ^a | 4 | 31.291 | .504 | .733 |
| Intercept | 39.183 | 1 | 39.183 | .631 | .429 |
| party | 10.998 | 1 | 10.998 | .177 | .675 |
| X1 | 2.323 | 1 | 2.323 | .037 | .847 |
| X2A | 85.092 | 1 | 85.092 | 1.370 | .245 |
| X3 | 40.638 | 1 | 40.638 | .654 | .421 |
| Error | 5404.002 | 87 | 62.115 | | |
| Total | 5702.796 | 92 | | | |
| Corrected Total | 5529.166 | 91 | | | |

a. R Squared = .023 (Adjusted R Squared = -.022)

Table 23: Anova table: six-month lag, inflation, unemployment, and real income; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.634 | 1.458 | -1.121 | -4.533 | 1.264 |
| [party=L] | .763 | 1.814 | .421 | -2.843 | 4.370 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | .404 | 2.090 | .193 | -3.751 | 4.559 |
| X2A | .131 | .112 | 1.170 | -.091 | .352 |
| X3 | -1.019 | 1.260 | -.809 | -3.523 | 1.485 |

a. This parameter is set to zero because it is redundant.

Table 24: Parameter Estimates table: six-month lag, inflation, unemployment, and real income; interactions omitted

None of the above tables, measuring the effect of economic conditions lagged by six months, show any statistical significance. The next section shows results for the models where economic data was lagged by nine months.

Nine-month lag, inflation and unemployment

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 604.193 ^a | 6 | 100.699 | 1.273 | .275 |
| Intercept | 1.507 | 1 | 1.507 | .019 | .890 |
| Party | .007 | 1 | .007 | .000 | .992 |
| X1 | 1.287 | 1 | 1.287 | .016 | .899 |
| X2A | 553.638 | 1 | 553.638 | 6.997 | .009 |
| Party * X1 | 2.318 | 1 | 2.318 | .029 | .864 |
| Party * X2A | 3.540 | 1 | 3.540 | .045 | .833 |
| X1 * X2A | 230.667 | 1 | 230.667 | 2.915 | .090 |
| Error | 9969.649 | 126 | 79.124 | | |
| Total | 10589.620 | 133 | | | |
| Corrected Total | 10573.841 | 132 | | | |

a. R Squared = .057 (Adjusted R Squared = .012)

Table 25: Anova table: nine-month lag, inflation and unemployment

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -.160 | 1.306 | -.122 | -2.744 | 2.425 |
| [Party=L] | -.024 | 2.511 | -.010 | -4.994 | 4.945 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .041 | .764 | .053 | -1.471 | 1.552 |
| X2A | -.376 | .166 | -2.264 | -.704 | -.047 |
| [Party=L] * X1 | -.304 | 1.773 | -.171 | -3.813 | 3.206 |
| [Party=N] * X1 | 0 ^a | . | . | . | . |
| [Party=L] * X2A | .036 | .169 | .212 | -.299 | .371 |
| [Party=N] * X2A | 0 ^a | . | . | . | . |
| X1 * X2A | .133 | .078 | 1.707 | -.021 | .288 |

a. This parameter is set to zero because it is redundant.

Table 26: Parameter Estimates table: nine-month lag, inflation and unemployment

At nine months, the unemployment variable again becomes significant, as shown in Table 25. While the relationship is in the expected direction, its effect is relatively limited. The parameter estimates table (26) suggests that for every 1% increase in the unemployment variable, the government popularity variable declines by 0.376%. Again, as none of the interactions prove significant, Tables 27 and 28 may provide a better indication of the true effect of the variable.

Nine-month lag, inflation and unemployment; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 436.940 ^a | 3 | 145.647 | 2.396 | .071 |
| Intercept | 238.569 | 1 | 238.569 | 3.924 | .050 |
| Party | 4.209 | 1 | 4.209 | .069 | .793 |
| X1 | 253.139 | 1 | 253.139 | 4.164 | .043 |
| X2A | 222.915 | 1 | 222.915 | 3.667 | .058 |
| Error | 7781.488 | 128 | 60.793 | | |
| Total | 8295.396 | 132 | | | |
| Corrected Total | 8218.429 | 131 | | | |

a. R Squared = .053 (Adjusted R Squared = .031)

Table 27: Anova table: nine-month lag, inflation and unemployment; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -2.040 | 1.089 | -1.872 | -4.195 | .116 |
| [Party=L] | .368 | 1.400 | .263 | -2.401 | 3.138 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | 1.118 | .548 | 2.041 | .034 | 2.203 |
| X2A | -.141 | .074 | -1.915 | -.287 | .005 |

a. This parameter is set to zero because it is redundant.

Table 28: Parameter Estimates table: nine-month lag, inflation and unemployment; interactions omitted

With interactions removed, the unemployment variable falls out of the 95% threshold for significance. Inflation becomes significant, but it is in the opposite direction to what one would logically assume. The parameter estimates table (28) indicates that for every 1% increase in the inflation variable, the government popularity variable increases by 1.118%.

Nine-month lag, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 1495.755 ^a | 10 | 149.575 | 2.668 | .007 |
| Intercept | 144.029 | 1 | 144.029 | 2.569 | .113 |
| party | 200.507 | 1 | 200.507 | 3.576 | .062 |
| X1 | 67.904 | 1 | 67.904 | 1.211 | .274 |
| X2A | 3.715 | 1 | 3.715 | .066 | .798 |
| X3 | 11.065 | 1 | 11.065 | .197 | .658 |
| X1 * X2A | 37.931 | 1 | 37.931 | .677 | .413 |
| X1 * X3 | 179.111 | 1 | 179.111 | 3.195 | .078 |
| party * X1 | 319.667 | 1 | 319.667 | 5.702 | .019 |
| X2A * X3 | 50.141 | 1 | 50.141 | .894 | .347 |
| party * X2A | 63.013 | 1 | 63.013 | 1.124 | .292 |
| party * X3 | 9.196 | 1 | 9.196 | .164 | .687 |
| Error | 4429.131 | 79 | 56.065 | | |
| Total | 6069.379 | 90 | | | |
| Corrected Total | 5924.885 | 89 | | | |

a. R Squared = .252 (Adjusted R Squared = .158)

Table 29: Anova table: nine-month lag, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | .443 | 1.712 | .259 | -2.965 | 3.851 |
| [party=L] | -7.432 | 3.930 | -1.891 | -15.255 | .390 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | -3.852 | 2.926 | -1.317 | -9.675 | 1.972 |
| X2A | -.210 | .261 | -.805 | -.730 | .310 |
| X3 | .228 | 1.644 | .139 | -3.044 | 3.499 |
| X1 * X2A | -.343 | .417 | -.823 | -1.174 | .487 |
| X1 * X3 | 3.532 | 1.976 | 1.787 | -.401 | 7.464 |
| [party=L] * X1 | 13.230 | 5.541 | 2.388 | 2.202 | 24.259 |
| [party=N] * X1 | 0 ^a | . | . | . | . |
| X2A * X3 | -.174 | .184 | -.946 | -.539 | .192 |
| [party=L] * X2A | .274 | .258 | 1.060 | -.240 | .788 |
| [party=N] * X2A | 0 ^a | . | . | . | . |
| [party=L] * X3 | 1.079 | 2.664 | .405 | -4.224 | 6.382 |
| [party=N] * X3 | 0 ^a | . | . | . | . |

a. This parameter is set to zero because it is redundant.

Table 30: Parameter Estimates table: nine-month lag, inflation, unemployment and real income

With real income added to the nine-month lag data set, we see that the relationship between party affiliation and inflation becomes significant; however, inflation itself is not significant. The relationship itself means little, then, since inflation itself does not have an effect on government popularity.

Nine-month lag, inflation, unemployment, and real income; interactions omitted.

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 658.800 ^a | 4 | 164.700 | 2.729 | .034 |
| Intercept | 168.382 | 1 | 168.382 | 2.790 | .098 |
| party | 2.375 | 1 | 2.375 | .039 | .843 |
| X1 | 34.096 | 1 | 34.096 | .565 | .454 |
| X2A | 554.569 | 1 | 554.569 | 9.188 | .003 |
| X3 | 268.907 | 1 | 268.907 | 4.455 | .038 |
| Error | 5311.235 | 88 | 60.355 | | |
| Total | 6127.125 | 93 | | | |
| Corrected Total | 5970.034 | 92 | | | |

a. R Squared = .110 (Adjusted R Squared = .070)

Table 31: Anova table: nine-month lag, inflation, unemployment, and real income; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -2.710 | 1.433 | -1.891 | -5.558 | .138 |
| [party=L] | .351 | 1.770 | .198 | -3.166 | 3.868 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | 1.474 | 1.961 | .752 | -2.423 | 5.371 |
| X2A | -.325 | .107 | -3.031 | -.539 | -.112 |
| X3 | 2.525 | 1.196 | 2.111 | .148 | 4.903 |

a. This parameter is set to zero because it is redundant.

Table 32: Parameter Estimates table: nine-month lag, inflation, unemployment, and real income; interactions omitted

Interestingly, without interactions, both the unemployment and real income variables reach significance. The parameter estimates, in Table 32, suggest that for every 1% increase in the unemployment variable, the government popularity variable is reduced by 0.325%, whilst for every increase of 1% in the real income variable, the government popularity variable increases by 2.525%. The following section presents results of the models where economic data was lagged by 12 months.

12-month lag, inflation and unemployment

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 722.680 ^a | 6 | 120.447 | 1.658 | .137 |
| Intercept | 132.810 | 1 | 132.810 | 1.828 | .179 |
| Party | 14.044 | 1 | 14.044 | .193 | .661 |
| X1 | 16.623 | 1 | 16.623 | .229 | .633 |
| X2A | 560.251 | 1 | 560.251 | 7.710 | .006 |
| Party * X1 | 34.366 | 1 | 34.366 | .473 | .493 |
| Party * X2A | 202.728 | 1 | 202.728 | 2.790 | .097 |
| X1 * X2A | 436.569 | 1 | 436.569 | 6.008 | .016 |
| Error | 9228.150 | 127 | 72.663 | | |
| Total | 10079.141 | 134 | | | |
| Corrected Total | 9950.830 | 133 | | | |

a. R Squared = .073 (Adjusted R Squared = .029)

Table 33: Anova table: 12-month lag, inflation and unemployment

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.822 | 1.299 | -1.402 | -4.392 | .749 |
| [Party=L] | .896 | 2.038 | .440 | -3.137 | 4.929 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .635 | .740 | .858 | -.830 | 2.100 |
| X2A | .496 | .160 | 3.092 | .179 | .814 |
| [Party=L] * X1 | -.746 | 1.085 | -.688 | -2.893 | 1.401 |
| [Party=N] * X1 | 0 ^a | . | . | . | . |
| [Party=L] * X2A | -.274 | .164 | -1.670 | -.598 | .051 |
| [Party=N] * X2A | 0 ^a | . | . | . | . |
| X1 * X2A | -.181 | .074 | -2.451 | -.327 | -.035 |

a. This parameter is set to zero because it is redundant.

Table 34: Parameter Estimates table: 12-month lag, inflation and unemployment

At twelve months, unemployment becomes significant, as does the relationship between inflation and unemployment. However, the relationship is in the opposite direction to what one would expect. The estimates presented in Table 34 suggest that for every 1% increase in the unemployment variable, the government popularity variable increases by 0.496%.

12-month lag, inflation and unemployment; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|-----|-------------|-------|------|
| Corrected Model | 123.123 ^a | 3 | 41.041 | .623 | .602 |
| Intercept | 141.116 | 1 | 141.116 | 2.141 | .146 |
| Party | 3.574 | 1 | 3.574 | .054 | .816 |
| X1 | .788 | 1 | .788 | .012 | .913 |
| X2A | 118.002 | 1 | 118.002 | 1.790 | .183 |
| Error | 8502.109 | 129 | 65.908 | | |
| Total | 8833.466 | 133 | | | |
| Corrected Total | 8625.232 | 132 | | | |

a. R Squared = .014 (Adjusted R Squared = -.009)

Table 35: Anova table: 12-month lag, inflation and unemployment; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.564 | 1.111 | -1.407 | -3.763 | .635 |
| [Party=L] | .337 | 1.446 | .233 | -2.523 | 3.197 |
| [Party=N] | 0 ^a | . | . | . | . |
| X1 | .055 | .499 | .109 | -.932 | 1.041 |
| X2A | .103 | .077 | 1.338 | -.049 | .256 |

a. This parameter is set to zero because it is redundant.

Table 36: Parameter Estimates table: 12-month lag, inflation and unemployment; interactions omitted

If we remove the interactions, unemployment loses its significance; see Table 35. However in this case, as there is a significant relationship between independent variables in Table 33, it raises the question of whether the removal of interactions is appropriate; in which case we are left with a model that suggests a relationship contrary to what we would expect.

12-month lag, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 1385.029 ^a | 10 | 138.503 | 1.961 | .049 |
| Intercept | 186.693 | 1 | 186.693 | 2.644 | .108 |
| party | 120.897 | 1 | 120.897 | 1.712 | .195 |
| X1 | 309.271 | 1 | 309.271 | 4.380 | .040 |
| X2A | 646.350 | 1 | 646.350 | 9.153 | .003 |
| X3 | 86.137 | 1 | 86.137 | 1.220 | .273 |
| X1 * X2A | 194.069 | 1 | 194.069 | 2.748 | .101 |
| X1 * X3 | 5.873 | 1 | 5.873 | .083 | .774 |
| party * X1 | 73.875 | 1 | 73.875 | 1.046 | .310 |
| X2A * X3 | .247 | 1 | .247 | .003 | .953 |
| party * X2A | .699 | 1 | .699 | .010 | .921 |
| party * X3 | 2.887 | 1 | 2.887 | .041 | .840 |
| Error | 5578.587 | 79 | 70.615 | | |
| Total | 7025.103 | 90 | | | |
| Corrected Total | 6963.616 | 89 | | | |

a. R Squared = .199 (Adjusted R Squared = .097)

Table 37: Anova table: 12-month lag, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | .585 | 1.880 | .311 | -3.157 | 4.328 |
| [party=L] | 6.014 | 4.596 | 1.308 | -3.135 | 15.163 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | -2.705 | 2.673 | -1.012 | -8.025 | 2.615 |
| X2A | .848 | .280 | 3.025 | .290 | 1.406 |
| X3 | -2.349 | 2.362 | -.995 | -7.051 | 2.352 |
| X1 * X2A | -.590 | .356 | -1.658 | -1.297 | .118 |
| X1 * X3 | -.794 | 2.752 | -.288 | -6.271 | 4.684 |
| [party=L] * X1 | -6.514 | 6.368 | -1.023 | -19.190 | 6.162 |
| [party=N] * X1 | 0 ^a | . | . | . | . |
| X2A * X3 | -.010 | .170 | -.059 | -.349 | .329 |
| [party=L] * X2A | .026 | .266 | .100 | -.503 | .556 |
| [party=N] * X2A | 0 ^a | . | . | . | . |
| [party=L] * X3 | -.599 | 2.965 | -.202 | -6.500 | 5.302 |
| [party=N] * X3 | 0 ^a | . | . | . | . |

a. This parameter is set to zero because it is redundant.

Table 38: Parameter Estimates table: 12-month lag, inflation, unemployment, and real income

When real income is added in the 12-month lagged data, inflation and unemployment become significant. However, again, when looking at the parameter estimates indicated in Table 38, we see that all of the relationships are not in the expected direction. For every 1% increase in inflation, there is a corresponding decline in the government popularity variable by 2.705%. In contrast, for every 1% increase in the unemployment variable, the government popularity variable increases by 0.848%, rather than declining, as one would expect.

12-month lag, inflation, unemployment, and real income; interactions omitted

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | Df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|--------|------|
| Corrected Model | 1092.794 ^a | 4 | 273.198 | 4.866 | .001 |
| Intercept | 128.510 | 1 | 128.510 | 2.289 | .134 |
| party | 158.628 | 1 | 158.628 | 2.825 | .096 |
| X1 | 362.977 | 1 | 362.977 | 6.465 | .013 |
| X2A | 870.106 | 1 | 870.106 | 15.497 | .000 |
| X3 | 347.656 | 1 | 347.656 | 6.192 | .015 |
| Error | 4884.855 | 87 | 56.148 | | |
| Total | 6174.016 | 92 | | | |
| Corrected Total | 5977.648 | 91 | | | |

a. R Squared = .183 (Adjusted R Squared = .145)

Table 39: Anova table: 12-month lag, inflation, unemployment, and real income; interactions omitted

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | T | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | .797 | 1.461 | .546 | -2.106 | 3.701 |
| [party=L] | 2.792 | 1.661 | 1.681 | -.510 | 6.094 |
| [party=N] | 0 ^a | . | . | . | . |
| X1 | -4.768 | 1.875 | -2.543 | -8.495 | -1.041 |
| X2A | .412 | .105 | 3.937 | .204 | .620 |
| X3 | -2.923 | 1.175 | -2.488 | -5.258 | -.588 |

a. This parameter is set to zero because it is redundant.

Table 40: Parameter Estimates: 12-month lag, inflation, unemployment, and real income; interactions omitted

When interactions are removed, this problem remains. Table 39 indicates that all three economic variables become significant, but only one of them is in the expected direction. The parameter estimates table (40) suggests that for every 1% increase in inflation, the government popularity variable declines by 4.768%. In contrast, increases in the unemployment variable lead to an increase in the government popularity variable, while increases in real income lead to a decrease in the government popularity variable.

Coalition as the dependent variable, and tables for the corresponding period with single-party majority as the dependent variable

This section of the chapter displays results aiming to test the difference between the support for the entire governing coalition vis-à-vis the support for the main governing party. In each lag section, non-lagged, three months, six months, nine months, and twelve months, it details the models measuring the support of the single party for the same period coalition governments began to form in New Zealand, before presenting tables with results from the models that tested the popularity of the entire governing coalition.

Non-lagged single party model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 462.816 ^a | 4 | 115.704 | 2.210 | .078 |
| Intercept | 8.573 | 1 | 8.573 | .164 | .687 |
| PARTY | 16.481 | 1 | 16.481 | .315 | .577 |
| X1 | 6.641 | 1 | 6.641 | .127 | .723 |
| X2A | 287.548 | 1 | 287.548 | 5.492 | .022 |
| X3 | 5.563 | 1 | 5.563 | .106 | .746 |
| Error | 3298.359 | 63 | 52.355 | | |
| Total | 3773.669 | 68 | | | |
| Corrected Total | 3761.175 | 67 | | | |

a. R Squared = .123 (Adjusted R Squared = .067)

Table 41: Anova table: non-lagged, single-party model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|-------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.249 | 1.657 | -.753 | -4.560 | 2.063 |
| [PARTY=L] | 1.084 | 1.932 | .561 | -2.777 | 4.945 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | .830 | 2.331 | .356 | -3.828 | 5.488 |
| X2A | .291 | .124 | 2.344 | .043 | .540 |
| X3 | .549 | 1.685 | .326 | -2.817 | 3.915 |

a. This parameter is set to zero because it is redundant.

Table 42: Parameter estimates table: non-lagged, single-party model, inflation, unemployment, and real income

Non-lagged coalition model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 133.174 ^a | 4 | 33.293 | .751 | .561 |
| Intercept | 5.954 | 1 | 5.954 | .134 | .715 |
| MajorParty | .104 | 1 | .104 | .002 | .961 |
| X1 | 3.517 | 1 | 3.517 | .079 | .779 |
| X2A | 121.182 | 1 | 121.182 | 2.734 | .103 |
| X3 | 17.536 | 1 | 17.536 | .396 | .532 |
| Error | 2792.125 | 63 | 44.319 | | |
| Total | 3025.338 | 68 | | | |
| Corrected Total | 2925.299 | 67 | | | |

a. R Squared = .046 (Adjusted R Squared = -.015)

Table 43: Anova table: non-lagged, coalition model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|----------------|----------------|------------|-------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -.559 | 1.519 | -.368 | -3.594 | 2.476 |
| [MajorParty=L] | -.088 | 1.804 | -.048 | -3.693 | 3.518 |
| [MajorParty=N] | 0 ^a | . | . | . | . |
| X1 | -.604 | 2.145 | -.282 | -4.891 | 3.683 |
| X2A | .181 | .110 | 1.654 | -.038 | .400 |
| X3 | -1.076 | 1.711 | -.629 | -4.495 | 2.343 |

a. This parameter is set to zero because it is redundant.

Table 44: Parameter Estimates table: non-lagged, coalition model, inflation, unemployment, and real income

In the shorter model period covered in Tables 41 and 42, we see the unemployment variable reaches statistical significance. However, its effect is in the opposite direction to what would be expected. The coalition model for the same period fails to find any statistically significant relationship between the popularity variable and any of the economic variables, as indicated in Tables 43 and 44.

Three-month lag, single-party model, inflation, unemployment and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|--------|------|
| Corrected Model | 598.060 ^a | 4 | 149.515 | 3.363 | .015 |
| Intercept | 106.751 | 1 | 106.751 | 2.401 | .126 |
| PARTY | 3.148 | 1 | 3.148 | .071 | .791 |
| X1 | 46.647 | 1 | 46.647 | 1.049 | .310 |
| X2A | 531.460 | 1 | 531.460 | 11.953 | .001 |
| X3 | 145.209 | 1 | 145.209 | 3.266 | .076 |
| Error | 2801.163 | 63 | 44.463 | | |
| Total | 3444.083 | 68 | | | |
| Corrected Total | 3399.224 | 67 | | | |

a. R Squared = .176 (Adjusted R Squared = .124)

Table 45: Anova table: three-month lag, single-party model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -2.741 | 1.521 | -1.803 | -5.780 | .298 |
| [PARTY=L] | .480 | 1.802 | .266 | -3.122 | 4.081 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | 2.244 | 2.191 | 1.024 | -2.134 | 6.622 |
| X2A | -.363 | .105 | -3.457 | -.573 | -.153 |
| X3 | 2.754 | 1.524 | 1.807 | -.291 | 5.800 |

a. This parameter is set to zero because it is redundant.

Table 46: Parameter Estimates table: three-month lag, single-party model, inflation, unemployment, and real income

Three-month lag, coalition model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 395.162 ^a | 4 | 98.791 | 2.652 | .041 |
| Intercept | 195.936 | 1 | 195.936 | 5.260 | .025 |
| MajorParty | .152 | 1 | .152 | .004 | .949 |
| X1 | 54.113 | 1 | 54.113 | 1.453 | .233 |
| X2A | 366.026 | 1 | 366.026 | 9.827 | .003 |
| X3 | 118.824 | 1 | 118.824 | 3.190 | .079 |
| Error | 2346.546 | 63 | 37.247 | | |
| Total | 2907.341 | 68 | | | |
| Corrected Total | 2741.708 | 67 | | | |

a. R Squared = .144 (Adjusted R Squared = .090)

Table 47: Anova table: three-month lag, coalition model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -3.227 | 1.382 | -2.335 | -5.988 | -.465 |
| [MajorParty=L] | -.103 | 1.620 | -.064 | -3.341 | 3.134 |
| [MajorParty=N] | 0 ^a | . | . | . | . |
| X1 | 2.349 | 1.949 | 1.205 | -1.546 | 6.244 |
| X2A | -.304 | .097 | -3.135 | -.499 | -.110 |
| X3 | 2.585 | 1.448 | 1.786 | -.307 | 5.478 |

a. This parameter is set to zero because it is redundant.

Table 48: Parameter Estimates table: three-month lag, coalition model, inflation, unemployment, and real income

The three-month lag models for both the single-party majority and coalition model find unemployment to be a statistically significant variable. However, the relationship is more significant for the single-party majority model, and the effect is greater. Table 46 suggests that, for the time period analysed, a 1% increase in the unemployment variable leads to a 0.367% decline in the government popularity variable. In contrast, Table 48, the parameter estimates for the coalition model, estimates that every 1% increase in the unemployment variable leads to a 0.304% reduction in the governing coalition popularity variable.

Six-month lag, single party model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 629.278 ^a | 4 | 157.319 | 3.335 | .015 |
| Intercept | 8.412 | 1 | 8.412 | .178 | .674 |
| PARTY | 35.055 | 1 | 35.055 | .743 | .392 |
| X1 | .138 | 1 | .138 | .003 | .957 |
| X2A | 458.524 | 1 | 458.524 | 9.720 | .003 |
| X3 | 286.389 | 1 | 286.389 | 6.071 | .016 |
| Error | 2971.784 | 63 | 47.171 | | |
| Total | 3607.026 | 68 | | | |
| Corrected Total | 3601.062 | 67 | | | |

a. R Squared = .175 (Adjusted R Squared = .122)

Table 49: Anova table: six-month lag, single party model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -.106 | 1.561 | -.068 | -3.225 | 3.013 |
| [PARTY=L] | 1.590 | 1.844 | .862 | -2.096 | 5.276 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | .119 | 2.190 | .054 | -4.259 | 4.496 |
| X2A | .341 | .109 | 3.118 | .123 | .560 |
| X3 | -3.823 | 1.552 | -2.464 | -6.924 | -.723 |

a. This parameter is set to zero because it is redundant.

Table 50: Parameter Estimates table: six-month lag, single party model, inflation, unemployment, and real income

6 month lag, coalition model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 295.110 ^a | 4 | 73.777 | 2.095 | .093 |
| Intercept | 114.580 | 1 | 114.580 | 3.253 | .076 |
| MajorParty | 2.712 | 1 | 2.712 | .077 | .782 |
| X1 | 59.870 | 1 | 59.870 | 1.700 | .197 |
| X2A | 157.760 | 1 | 157.760 | 4.479 | .038 |
| X3 | 6.347 | 1 | 6.347 | .180 | .673 |
| Error | 2113.360 | 60 | 35.223 | | |
| Total | 2577.246 | 65 | | | |
| Corrected Total | 2408.470 | 64 | | | |

a. R Squared = .123 (Adjusted R Squared = .064)

Table 51: Anova table: six-month lag, coalition model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -2.691 | 1.451 | -1.855 | -5.594 | .212 |
| [MajorParty=L] | -.487 | 1.756 | -.277 | -3.999 | 3.025 |
| [MajorParty=N] | 0 ^a | . | . | . | . |
| X1 | 3.174 | 2.434 | 1.304 | -1.696 | 8.043 |
| X2A | .203 | .096 | 2.116 | .011 | .395 |
| X3 | -.611 | 1.439 | -.424 | -3.489 | 2.267 |

a. This parameter is set to zero because it is redundant.

Table 52: Parameter Estimates table: six-month lag, coalition model, inflation, unemployment, and real income

In contrast to the model that takes in the wider time period, the shortened six-month lag structure for the single party finds unemployment significant. However, as Table 50 indicates, the estimated effect is in the opposite direction to what one would expect. Real income is also statistically significant, but its effect is also in the opposite direction to what is expected. For every 1% increase in real income, the government popularity variable decreases by 0.611%. The corresponding period for the governing coalition popularity variable finds the unemployment variable significant, though less so than in Table 50, but real income loses its significance. However, again, the unemployment variable's predicted effect is in the opposite direction to what would be expected, as shown in Table 52.

Nine-month lag, single-party model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 435.008 ^a | 4 | 108.752 | 2.252 | .074 |
| Intercept | 86.857 | 1 | 86.857 | 1.798 | .185 |
| PARTY | 6.835 | 1 | 6.835 | .142 | .708 |
| X1 | 149.282 | 1 | 149.282 | 3.091 | .084 |
| X2A | 226.444 | 1 | 226.444 | 4.689 | .034 |
| X3 | 18.004 | 1 | 18.004 | .373 | .544 |
| Error | 2946.128 | 61 | 48.297 | | |
| Total | 3381.196 | 66 | | | |
| Corrected Total | 3381.136 | 65 | | | |

a. R Squared = .129 (Adjusted R Squared = .072)

Table 53: Anova table: nine-month lag, single-party model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -1.942 | 1.644 | -1.181 | -5.230 | 1.346 |
| [PARTY=L] | -.714 | 1.898 | -.376 | -4.510 | 3.082 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | 3.925 | 2.232 | 1.758 | -.539 | 8.388 |
| X2A | -.255 | .118 | -2.165 | -.491 | -.020 |
| X3 | 1.025 | 1.678 | .611 | -2.331 | 4.380 |

a. This parameter is set to zero because it is redundant.

Table 54: Parameter Estimates table: nine-month lag, single-party model, inflation, unemployment, and real income

Nine-month lag, coalition model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 283.331 ^a | 4 | 70.833 | 2.214 | .078 |
| Intercept | 213.048 | 1 | 213.048 | 6.659 | .012 |
| MajorParty | 30.068 | 1 | 30.068 | .940 | .336 |
| X1 | 93.895 | 1 | 93.895 | 2.935 | .092 |
| X2A | 224.921 | 1 | 224.921 | 7.030 | .010 |
| X3 | 48.780 | 1 | 48.780 | 1.525 | .222 |
| Error | 1919.723 | 60 | 31.995 | | |
| Total | 2352.125 | 65 | | | |
| Corrected Total | 2203.055 | 64 | | | |

a. R Squared = .129 (Adjusted R Squared = .071)

Table 55: Anova table: nine-month lag, coalition model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | -2.768 | 1.349 | -2.053 | -5.465 | -.071 |
| [MajorParty=L] | -1.483 | 1.529 | -.969 | -4.542 | 1.577 |
| [MajorParty=N] | 0 ^a | . | . | . | . |
| X1 | 3.108 | 1.814 | 1.713 | -.521 | 6.738 |
| X2A | -.248 | .093 | -2.651 | -.435 | -.061 |
| X3 | 1.573 | 1.274 | 1.235 | -.975 | 4.121 |

a. This parameter is set to zero because it is redundant.

Table 56: Parameter Estimates table: nine-month lag, coalition model, inflation, unemployment, and real income

The nine-month lag for both the single-party model and coalition model find unemployment to be statistically significant. The coalition model proves to be more significant, however; the average predicted effect of the variable proves to be slightly less than for the single party model: a reduction in the government popularity variable of 0.245%, compared to 0.255%, for every 1% increase in the unemployment variable.

12-month lag, single-party model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|--------|------|
| Corrected Model | 1079.311 ^a | 4 | 269.828 | 7.050 | .000 |
| Intercept | 190.949 | 1 | 190.949 | 4.989 | .029 |
| PARTY | 187.962 | 1 | 187.962 | 4.911 | .031 |
| X1 | 177.183 | 1 | 177.183 | 4.629 | .036 |
| X2A | 958.638 | 1 | 958.638 | 25.047 | .000 |
| X3 | 159.452 | 1 | 159.452 | 4.166 | .046 |
| Error | 2258.110 | 59 | 38.273 | | |
| Total | 3338.317 | 64 | | | |
| Corrected Total | 3337.421 | 63 | | | |

a. R Squared = .323 (Adjusted R Squared = .278)

Table 57: Anova table: 12-month lag, single-party model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|-----------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | 1.460 | 1.527 | .956 | -1.596 | 4.517 |
| [PARTY=L] | 3.678 | 1.660 | 2.216 | .357 | 6.999 |
| [PARTY=N] | 0 ^a | . | . | . | . |
| X1 | -4.271 | 1.985 | -2.152 | -8.243 | -.299 |
| X2A | .535 | .107 | 5.005 | .321 | .749 |
| X3 | -2.896 | 1.419 | -2.041 | -5.734 | -.057 |

a. This parameter is set to zero because it is redundant.

Table 58: Parameter Estimates table: 12-month lag, single-party model, inflation, unemployment, and real income

12-month lag, coalition model, inflation, unemployment, and real income

Tests of Between-Subjects Effects

Dependent Variable: Y1

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|-----------------|-------------------------|----|-------------|-------|------|
| Corrected Model | 464.158 ^a | 4 | 116.039 | 3.198 | .019 |
| Intercept | 96.384 | 1 | 96.384 | 2.656 | .108 |
| MajorParty | 74.042 | 1 | 74.042 | 2.040 | .158 |
| X1 | 225.076 | 1 | 225.076 | 6.202 | .016 |
| X2A | 287.624 | 1 | 287.624 | 7.926 | .007 |
| X3 | 70.181 | 1 | 70.181 | 1.934 | .169 |
| Error | 2177.382 | 60 | 36.290 | | |
| Total | 2677.001 | 65 | | | |
| Corrected Total | 2641.539 | 64 | | | |

a. R Squared = .176 (Adjusted R Squared = .121)

Table 59: Anova table: 12-month lag, coalition model, inflation, unemployment, and real income

Parameter Estimates

Dependent Variable: Y1

| Parameter | B | Std. Error | t | 95% Confidence Interval | |
|----------------|----------------|------------|--------|-------------------------|-------------|
| | | | | Lower Bound | Upper Bound |
| Intercept | 1.202 | 1.505 | .799 | -1.807 | 4.212 |
| [MajorParty=L] | 2.245 | 1.571 | 1.428 | -.899 | 5.388 |
| [MajorParty=N] | 0 ^a | . | . | . | . |
| X1 | -4.760 | 1.911 | -2.490 | -8.584 | -.937 |
| X2A | .290 | .103 | 2.815 | .084 | .496 |
| X3 | -1.941 | 1.396 | -1.391 | -4.734 | .851 |

a. This parameter is set to zero because it is redundant.

Table 60: Parameter Estimates table: 12-month lag, coalition model, inflation, unemployment, and real income

At 12 months we see the single-party model find all three economic variables significant at the 95% confidence level. As in the wider single-party model, however, the estimate effects of the variables are in the opposite direction to what should be expected, with the exception of inflation. Table 58 suggests that increases in unemployment increase government support, while increases in real income harm government support. In comparison, the coalition model finds that inflation and unemployment remain significant, but not real income. Inflation is found to be more significant, with the estimated effect in Table 60, proving to be greater than the single-model counterpart, but unemployment becomes less significant, as does its effect. Again, the effect of unemployment is in the opposite direction to what is expected.

Conclusion: What does it all mean?

What becomes clear is that the results of my macro-study are extremely mixed. We find a range of statistically significant relationships across the various lag periods, with different economic variables apparently significant at different times, and in completely different directions. In this section, I will discuss the more promising results for the longer time period, the conflicting results, and then the models that aimed to test the difference between coalitions and the majority party in government.

Single-party majority model

The 'best-case scenario,' by which I mean the models which appear to fit our expectations most closely, are the three-month lagged models. In Tables 9-12 we see unemployment reach significance and the parameter estimates suggesting that a 1% increase in the unemployment variable leads to a 0.259% decline in the government popularity variable.¹⁹⁸ When real income was added, in the shorter data set, we again find the expected relationship. Tables 13-14 indicated real income was significant, and once we removed interactions, Tables 15-16 indicated both unemployment and real income were significant, with an estimated effect of -0.428% and 2.899% respectively, on the government popularity variable. It is important to note that the changes referred to are not in the actual levels of government popularity. They Y variable was the percentage change in government popularity. This means that a 1% increase in percentage change in unemployment leads to a decrease in the percentage change in government popularity of 0.428%. So for example, if the actual level of government support is at 48%, and moves to 45%, we see a percentage change in government support of -6.25%. For that change to have been caused purely by the change in unemployment, we would have to see the change in the unemployment rate between quarters reach 14.61%.¹⁹⁹ That is not as big as it seems: for example, that is an increase in the actual unemployment rate from 2% to 2.29%, or from 8% to 9.17%. The effect of real income was, in comparison, quite strong. If government support increases from 45% to 48%, a change of 6.67%, the increase in the real income rate across the same quarter would have to be 2.23%, to explain the entire variance. The expected effect of unemployment, as showcased in Tables 11-12, and real income, as indicated in Tables 15-16, can be found plotted in Figures 1 and 2 below.²⁰⁰ The grey area indicates the 95% confidence interval. The black line gives the estimated percentage change in government popularity as a function of the percentage change in unemployment.

¹⁹⁸ Estimated effect from Table 12, interactions removed.

¹⁹⁹ This is based on the model presented in Tables 15-16. If we take the longer time period, measuring only inflation and unemployment, the effect is more muted. For example, for the same reduction of 6.25% in government popularity to be caused solely by increases in unemployment, the percentage change in unemployment would have to be 24.13%. Again, this is not as dramatic as it sounds: a 24.13% increase the unemployment rate would be the rate moving from 2% to 2.48%

²⁰⁰ The graph shows the estimated effect of the significant economic variable, with the grey area showing the upper and lower estimated effect, and the black line indicating the average expected effect. You will notice that the estimated effect does not continue 'to infinity.' This is because the graphs show the estimated effect with the data available; it does not predict the effect beyond what the data set has suggested.

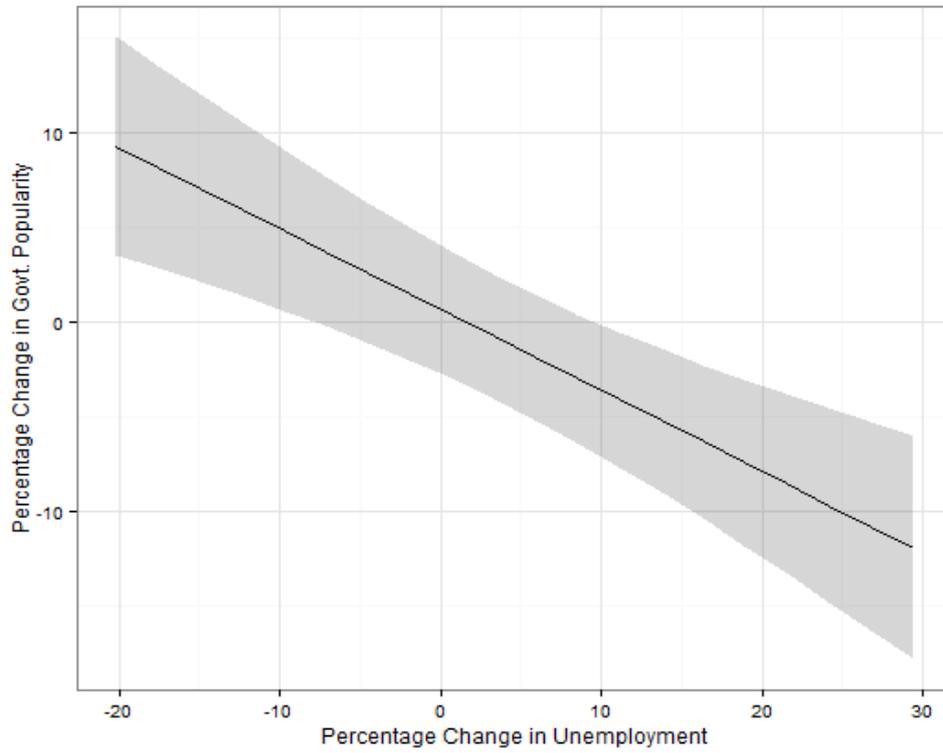


Figure 3: Estimated relationship between government popularity and unemployment when lagged by three months

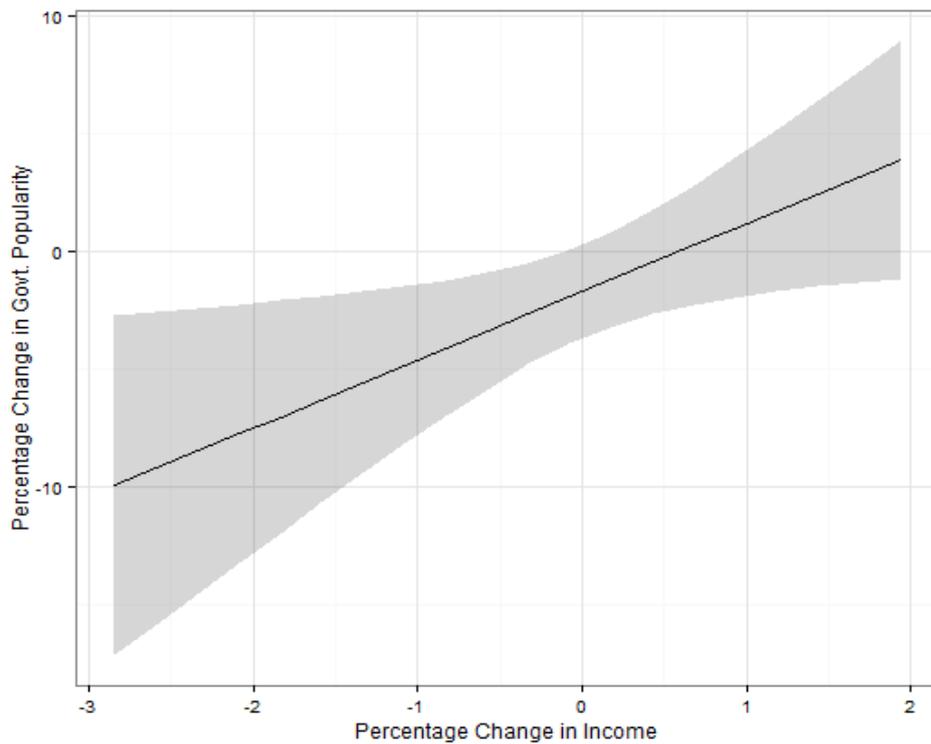


Figure 4: Estimated relationship between government popularity and real income when lagged by three months

If our significant relationships finished there, we could say that it is possible to find a link between macroeconomic factors and government popularity in New Zealand; however, the situation is complicated somewhat by the results that followed. No relationship was detected when the data was lagged by six months, but when it was lagged by nine months, macroeconomic variables again became significant, and not in the expected direction. Tables 27 and 28 indicate that inflation was significant, but that increases in inflation led to an increase in government popularity, not a decline. More problematic are the 12-month lag series. Tables 33-34 and 37-40 all indicate significant relationships; however, most of the significant variables have the opposite effect to what should be expected. For example, in Table 38, we see that for every 1% increase in inflation there is a corresponding decline in the government popularity variable by 2.705%. In contrast, for every 1% increase in the unemployment variable, the government popularity variable increases by 0.848%, rather than declining, as one would expect.

To some extent we can dismiss these results for being logically inconsistent. It seems exceptionally unlikely that increases in unemployment and inflation lead to increased support for the government. Further, the time period is at the upper end of voters' memories; the literature discussed in Chapter 1 suggested voters tend to be extremely myopic, remembering events across a few short months rather than as far as a year in the past. This lends credence to the view that governments are unlikely to be judged for economic conditions nine to twelve months in the past. However, if we can dismiss these results as being irrelevant, despite their statistical significance, it is hard to stand by the statistical significance of the results at three months. It is likely that there are other factors that have not been allowed for in our model because the models were relatively simple and the real world is complicated. It is also possible that chance has influenced some of the results, but significant results by chance are by definition relatively rare.

Coalition tests

Many of the same problems discussed above occur in the shorter data sets designed to test the strength of economic conditions on entire coalitions. As with the above results, I will discuss the 'best-case scenario.' The three-month lagged data again proved to be significant and in the right direction; both the coalition model and the single-party comparison model found unemployment to be a statistically significant variable. However, the estimated effect of economic conditions on the full coalition was weaker than that estimated for the single-party model. This is shown in Table 48, where it is estimated that a 1% increase in the unemployment variable leads to a 0.304% reduction in the governing coalition popularity variable. In contrast, Table 46 suggests that the single-party dependant variable declined by 0.367% for every 1% increase in unemployment. This would indicate that parties making up coalitions are not affected equally by the rise and fall of economic conditions, with minor parties not being punished or rewarded in the same way. Of course, as with the larger data series, a number of the coalition tables, 41-44, 49-52, and 57-60, indicated significant relationships in the opposite direction than expected. Therefore, the same caveats about my findings, as discussed in the previous section relating to the longer data series, apply here also.

Further, what these tests do not indicate is whether parties in coalition or support and supply agreements are affected less or more in comparison to a situation where no coalition exists. Since MMP began in New Zealand in 1996, every government has been in a coalition or support and supply arrangement. An attempt to compare the pre-MMP period, using a single party variable, to the post-MMP period, using a coalition variable, is problematic. Such a model would be unable to

account for the difference in expectations of the electorate in the two time periods. Any conclusions based on differences in the expected effect of the independent variables could not conclusively be attributed to the difference between being in a coalition, and being a single party.

Chapter 4: Methodology, micro-level analysis

In this chapter I discuss the methodology behind my micro-level study. It covers how the data set was created, the economic variables I have selected, and the control variables I have included, before detailing the statistical model chosen for the analysis.

The data set

All of the data used in this analysis comes from the New Zealand Election Study. The NZES is an election survey that has been conducted in each New Zealand general election since 1990.²⁰¹ The main source of data for the study comes from the questionnaires that are posted to randomly selected registered electors across the country immediately following each election.²⁰² The study has also made use of internet surveys and rolling campaign telephone surveys; however, the economic questions needed for this project were only asked in their entirety in the postal surveys. All of the data employed in my analysis then, was gathered following the election itself. The elections chosen for analysis were 2002, 2005, 2008, 2011, and 2014. These elections have been chosen because there has been little or no analysis of them with reference to the economic question. However, they are analysed individually rather than collectively. This has been done because of the slightly different questions that have been asked in the NZES at each election.

The dependent variable

The purpose of a micro-level study is to measure how *perceptions* of the economy affect vote choice. As discussed in the literature review, much of the research employs a sanctioning model of voting; an assumption that voters are prone to vote based on the performance of the current government, rather than listening to the promises of the opposition. The dependent variable in any such analysis becomes voting for or against the government.²⁰³ This reduced the number of cases I was able to use from the NZES database; respondents that did not vote in the election, or failed to answer the question, were removed from the analysis. The total number of respondents in the model fluctuated from election to election, but ranged from 2028 to 4207.

The independent variables

As the data set has been created by a third party, I have not chosen the wording of the economic questions myself. However, the format of these questions is based on other international studies and I have confidence that these questions are consistent with their international counterparts. Unfortunately, the questions asked across the five elections I am examining have not been entirely consistent. The same economic questions were posed in 2002, 2005, and 2008.²⁰⁴

²⁰¹ The NZES is conducted by researchers from a range of institutions, but is most closely associated with the University of Auckland. See the NZES website for more information: The New Zealand Election Study, "The New Zealand Election Study," <http://www.nzes.org/>. Accessed on 20 Oct. 2016

²⁰² The data sets for each election can be found at the NZES website; <http://www.nzes.org/>.

²⁰³ In this study, 'government' refers to the main party making up the government; the government therefore is only ever the National Party or the Labour Party. This is problematic; every party that has won an election since MMP was introduced in New Zealand has entered a coalition or confidence and supply agreement to form a government. However, as one party has always had the vast majority of seats and almost all cabinet positions, and is more likely to be perceived by the public as being 'The Government' than the support parties, I believe this study still accurately tests links between voting choice and economic perceptions.

²⁰⁴ Though 2008 leaves out a question about the current state of the economy; see Question 1.

Question 1, sociotropic contemporary: “What do you think of the state of the economy these days in New Zealand? Would you say that it is — Very good, Good, Neither good nor bad, Bad, Very bad, Don’t Know”

Question 2, egotropic retrospective: “How does the financial situation of your household now compare with what it was 12 months ago? Is it — A lot better, A little better, About the same, A little worse, A lot worse, Don’t know”

Question 3, sociotropic retrospective: “How do you think the general economic situation in the country now compares with a year ago? Is it — A lot better, A little better, About the same, A little worse, A lot worse, Don’t know”

Question 4, sociotropic prospective: “What do you think the general economic situation in this country will be in 12 months’ time compared to now? Is it — A lot better, A little better, About the same, A little worse, A lot worse, Don’t know”

The first of these questions is sociotropic and taps a respondent’s view of the national economy at election time. It helps answer whether there is a relationship between how voters perceive the national economy as performing at the time of the election and their vote choice. The second question is egotropic and retrospective. It helps to answer whether there is a relationship between the personal financial situation of respondents over the last twelve months and their vote choice. The third question is sociotropic and retrospective. It helps to answer whether vote choice is affected by assessments of the economy over the last twelve months. The fourth question is sociotropic and prospective. It helps answer whether vote choice is affected by perceptions of how the economy is likely to perform in twelve months’ time. The same questions were not asked in 2011 and 2014, however, two economic questions that are of relevance to my investigation were:

Question 1A, sociotropic retrospective: “Would you say that over the last twelve months the state of the economy in New Zealand has got a lot better, a little better, stayed about the same, got a little worse, or a lot worse?”

Question 2B, egotropic prospective: “How likely or unlikely do you think it is that your household’s income could be severely reduced in the next twelve months? Is it – Very likely, Somewhat likely, Somewhat unlikely, Very unlikely, Don’t know”

The first of these questions is very similar to the retrospective sociotropic question in the 2002-2008 studies. It aims to provide the means for a researcher to determine whether there is a link between a voter’s perceptions of the economy over the last twelve months, and their vote choice. The second question is different from any of the questions in the 2002-2008 study. It is both egotropic and prospective; enabling a researcher to determine whether there is a link between vote choice and a respondent’s assessment of how their personal financial situation will change over the coming year.²⁰⁵ While it is disappointing there is not consistency across the elections chosen, the use of a sociotropic retrospective question – generally considered the most important question in the economic vote literature – across all five elections, is helpful. The questions, and the time period, 12-month intervals, fit in with existing literature. While it is unlikely that voters will remember macroeconomic conditions 12 months in the past, in terms of perceptions of the economy, or

²⁰⁵ ‘Personal’, as it is used here, is taken to refer to an individual’s household or family, not just that individual.

knowledge of the economy, 12 months seems like an easy reference point, fitting in with sanctioning model of voting: 'Am I better now than I was at this time last year?'

Control variables

As opposed to the macro-level study, it was far easier to include control variables that may have an effect on the way voters decide. The NZES includes such a wealth of information it is far more challenging to decide what to leave out. As discussed in my literature review, this thesis is concerned purely with the economic element of how voters decide. It does not strive to investigate every factor that may influence a voter's decision-making. However, it is worth inserting variables that have been considered to have a large effect on a voter's behaviour. Again, as discussed in the literature review, the non-economic aspects I have decided to control for are partisanship and income. The first of these is measured by the question, "Generally speaking, do you usually think of yourself as National, Labour, ACT, Greens, New Zealand First, or some other, or don't you usually think of yourself in this way?" The survey then asks, "If you don't usually think in this way: Do you generally think of yourself as a little closer to one of the parties than the others?"²⁰⁶ For my study, I have chosen to use only the first question. If respondents needed to be prompted on their political 'allegiance,' it seemed unlikely that it was going to have a large sway on their voting decision. The number of respondents identifying as close to parties other than National, Labour, Greens, or New Zealand First, was so small as to make the statistical model impossible to run. In my modelling, the partisan control variable only includes these four parties, a category including all other minor parties, and a category for don't know – which included those who left their answer blank. The key role of the partisanship variable is to determine whether being close to the government makes one more likely to vote for the government. As the government is only ever Labour or National, collating a number of minor parties is not so problematic. Respondents who express they are close to one party are not likely to vote for another. For example, someone who says they are close to ACT rather than close to National, is not likely to be voting for the National Party over ACT; in which case, even had I been able to run all of the parties separately, it would not have made a difference to my results.

The second control variable I have chosen is income. As discussed in my literature review, while the formation of the New Zealand Labour Party can clearly be attributed to class politics, whether class is still a key element of political decision-making in New Zealand is questionable. Instead of an occupational-based variable I have opted for income. As most manual workers are paid lower wages in New Zealand, I believe class to be captured by the income variable.²⁰⁷ Further, a general assumption is that those in the corporate or private sector on high salaries are more likely to vote for right-leaning parties that better cater for issues that high-income earners might be concerned about: for example, lowering taxes, less government, and privatisation. This variable was not the same across all the elections in my study. In 2002, 2005, and 2008 the question was asked in the

²⁰⁶ The wording of these questions has changed across the election years I am investigating. The in-text quotation is used in 2002 and 2005, but from 2008 the question changes to, "Generally speaking, do you think of yourself as CLOSE to any particular party?" The survey then gives respondents a list of options: Labour, National, Green, NZ First, ACT, United Future, Another party [please list], or Don't usually think of myself in this way. The question then asks, "If no, do you feel yourself a little CLOSER to one of the parties than the others?" While the difference in questions is irritating, I have continued to use it as if it is the same. It is just important to remember this fact when it comes to discussing my results.

²⁰⁷ Other work has also used an income variable as a class measure: see Freire and Lobo, "Economics, Ideology and Vote: Southern Europe, 1985–2000," 503.

same way “What was your personal income before tax between [1 April 2001] and [31 March 2002]?” The information in the brackets indicates the dates of the tax year preceding the election.²⁰⁸ A range of options are then listed: Don't Know, No income, Less than \$14,900, \$14,900-\$20,699, \$20,700-\$32,399, \$32,400-\$51,099, \$51,100-\$75,699, \$75,700-\$101,099, Over \$101,099. The values of these ranges change at each election study, but the number of options remains the same. Unfortunately, the 2011 and 2014 studies stopped asking about personal income, instead asking about household income only: “In what bracket was the total income before tax of all members of your household?” I have inserted the variable as if it had remained the same.²⁰⁹

The model

The data was entered into a binomial generalized linear model. A number of model variations were run. Firstly, a model with just the economic variables was run with interactions between the independent variables. If none of the interactions between the independent variables were significant, the model was run again with no interactions. Control variables were then inserted alongside the economic variables. Again, this was run with interactions; if no interactions were significant, the model was run again with the interactions omitted. This was repeated for each election I examined.

In the following chapter, I detail the results from my micro-level study.

²⁰⁸ It should be noted that there was an error in the 2005 NZES where the income question asked, “What was your personal income before tax between 1 April 2001 and 31 March 2005?” Obviously it was supposed to state ‘between 1 April 2004.’ I do not believe this has had a significant effect on respondents’ answers. When looking at the percentage of responses in each income bracket, the numbers do not differ greatly to those from 2008.

²⁰⁹ I acknowledge this is problematic, and a number of questions need to be asked. For example, does a household’s total income reflect the voting choice of an individual respondent? If the respondent to the survey is a 20-year-old living in a house with their parents who are on high incomes – who might be more likely to vote National – is the 20-year-old likely to vote the same way as their parents? Answering this question, and others, is beyond the scope of this project.

Chapter 5: Micro-level study results

This chapter details the results of my micro-level analysis of the economic vote in New Zealand. It is set out as follows: beginning with the 2002 election, I present Anova tables showing the significance, or otherwise, of the relationship between the economic questions available for each election and voting for or against the government. These are followed by estimate tables showing the average effect of each response to the statistically significant economic questions on the dependent variable. Secondly, I present the same tables with the control variables of partisanship and income to see whether the economic variables remain significant. These are presented sequentially from 2002 to 2014. For the sake of convenience, when I refer to government in this chapter, I am referring to the largest party making up the government at the time of the election being referred to. Therefore, in this chapter, I am only referring to the National Party or the Labour Party.

2002 Election

Economic variables only

| Source | Type III | | |
|-----------------------------------|-----------------|----|------|
| | Wald Chi-Square | Df | Sig. |
| (Intercept) | 13.300 | 1 | .000 |
| State of the economy these days | 41.102 | 5 | .000 |
| Household finances, retrospective | 11.246 | 5 | .047 |
| National economy, retrospective | 43.233 | 5 | .000 |
| National economy, prospective | 304.919 | 5 | .000 |

Table 61: Anova table: significance of economic variables on voting for the government in the 2002 election

| State of the economy these days | Mean | Std. Error | 95% Wald Confidence Interval | |
|---------------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Very Good | .60* | .054 | .49 | .70 |
| Good | .48 | .027 | .43 | .53 |
| Neither Good nor Bad | .39 | .025 | .34 | .44 |
| Bad | .36 | .035 | .29 | .43 |
| Very Bad | .17 | .070 | .07 | .35 |
| Don't know | .42 | .054 | .32 | .53 |

Table 62: Estimated effect of responses to the question "What do you think of the state of the economy these days in New Zealand?" on voting for the government in the 2002 election

| Estimates | | | | |
|-----------------------------------|------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Household finances, retrospective | | | | |
| A lot better | .36 | .044 | .28 | .45 |
| A little Better | .37 | .032 | .31 | .43 |
| About the same | .43 | .030 | .37 | .49 |
| A little worse | .41 | .032 | .35 | .48 |
| A lot worse | .46 | .044 | .38 | .55 |
| Don't Know | .33 | .080 | .19 | .50 |

Table 63: Estimated effect of responses to the question "How does the financial situation of your household now compare with what it was 12 months ago?" on voting for the government in the 2002 election

| Estimates | | | | |
|---------------------------------|------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| National economy, retrospective | | | | |
| A lot better | .50 | .064 | .38 | .62 |
| A little Better | .44 | .035 | .37 | .51 |
| About the same | .35 | .032 | .29 | .41 |
| A little worse | .28 | .030 | .22 | .34 |
| A lot worse | .36* | .066 | .25 | .50 |
| Don't Know | .43 | .052 | .33 | .53 |

Table 64: Estimated effect of responses to the question "How do you think the general economic situation in the country now compares with a year ago?" on voting for the government in the 2002 election

| Estimates | | | | |
|-------------------------------|------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| National economy, prospective | | | | |
| A lot better | .66* | .063 | .53 | .77 |
| A little Better | .61* | .034 | .55 | .68 |
| About the same | .43 | .032 | .37 | .50 |
| A little worse | .23* | .024 | .18 | .28 |
| A lot worse | .11* | .022 | .07 | .16 |
| Don't Know | .45 | .036 | .39 | .52 |

Table 65: Estimated effect of responses to the question "What do you think the general economic situation in this country will be in 12 months' time compared to now?" on voting for the government in the 2002 election

In Table 61 we see that all of the economic questions reached statistical significance. However, the actual effect of these variables on voting for the government is quite weak in some cases, or the opposite of what one would expect. For example, in Table 63 we see the probability of voting for the government was actually increased by thinking household finances had got worse. However, the range between responses is so small, the effect can be discounted; there is only a four percentage point difference between a little worse, and a little better. Further, the lower and upper estimates overlap to a degree that makes the relationship questionable. The probability of voting for the government was higher in the three sociotropic economic questions, that is, the three questions

which asked about the national economy. In Table 62 we see the probability of voting for the government if respondents thought the economy was very good, or good, was 60% and 48% respectively, in comparison to bad and very bad, which had a probability of 36% and 17%. Table 64 indicates the probability of voting for the government of those who thought the economy had got a little better or a lot better over the last 12 months was 44% and 50%. In comparison, the probability of voting for the government among those who believed the economy had become a little or a lot worse was 28% and 36% respectively. The strongest relationship was found in the sociotropic prospective question, Table 65, where the probability of voting for the government was 66% and 61% for a lot and a little better, and 23% and 11% for a little worse, and a lot worse.

Full model

| Tests of Model Effects | | | |
|-----------------------------------|-----------------|----|------|
| Source | Type III | | |
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 74.883 | 1 | .000 |
| State of the economy these days | 9.700 | 5 | .084 |
| Household finances, retrospective | 7.805 | 5 | .167 |
| National economy, retrospective | 22.211 | 5 | .000 |
| National economy, prospective | 127.119 | 5 | .000 |
| Partisanship | 863.577 | 5 | .000 |
| Personal Income | 1.430 | 1 | .232 |

Table 66: Anova table: significance of economic and control variables on voting for the government in the 2002 election

| Estimates | | | | |
|---------------------------------|------|------------|------------------------------|-------|
| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| A lot better | .17 | .046 | .10 | .28 |
| A little Better | .18 | .028 | .13 | .24 |
| About the same | .13 | .022 | .10 | .18 |
| A little worse | .11* | .019 | .07 | .15 |
| A lot worse | .18 | .050 | .10 | .30 |
| Don't Know | .19 | .041 | .12 | .28 |

Table 67: Estimated effect of responses to the question “How do you think the general economic situation in the country now compares with a year ago?” on voting for the government in the 2002 election, as part of model with control variables

| Estimates | | | | |
|------------------------------|------|------------|------------------------------|-------|
| National Economy prospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| A lot better | .28 | .070 | .17 | .44 |
| A little Better | .27* | .039 | .20 | .35 |
| About the same | .18 | .026 | .13 | .23 |
| A little worse | .09* | .016 | .06 | .13 |
| A lot worse | .05* | .014 | .03 | .09 |
| Don't Know | .19 | .031 | .14 | .26 |

Table 68: Estimated effect of responses to the question "What do you think the general economic situation in this country will be in 12 months' time compared to now?" on voting for the government in the 2002 election, as part of model with control variables

| Estimates | | | | |
|---------------------|------|------------|------------------------------|-------|
| Partisanship | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Labour | .80* | .024 | .75 | .85 |
| National | .07* | .013 | .05 | .10 |
| Green | .04* | .017 | .02 | .09 |
| NZ First | .07* | .026 | .03 | .14 |
| Other minor parties | .07* | .023 | .04 | .13 |
| Don't know | .37 | .032 | .31 | .43 |

Table 69: Estimated effect of partisanship on voting for the government in the 2002 election, as part of a model with control variables

When we introduce control variables into the 2002 election model both the “economy these days” and the questionable retrospective egotropic relationships lose their significance. Further, the sociotropic retrospective question also finds its effect diminished to an almost non-existent level. For example, in Table 67, we see the difference between those who thought the economy had got a little better and a little worse was only seven percentage points: 18% as opposed to 11%. In contrast, national prospective assessments of the economy had more of an impact on the probability of voting for the government. Those who thought the economy would get a lot, or a little, better had probability values of 28% and 27% respectively, in comparison to those who thought it would get a little, or a lot, worse: 9% and 5% respectively.

2005 Election

Economic variables only

| Source | Type III | | |
|-----------------------------------|-----------------|----|------|
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 1.698 | 1 | .192 |
| State of the economy these days | 38.114 | 5 | .000 |
| Household finances, retrospective | 2.562 | 5 | .767 |
| National economy, retrospective | 32.560 | 5 | .000 |
| National economy, prospective | 123.753 | 5 | .000 |

Table 70: Anova table: significance of economic variables on voting for the government in the 2005 election

| State of Economy These Days | Mean | Std. Error | 95% Wald Confidence Interval | |
|-----------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Very Good | .64 | .049 | .54 | .73 |
| Good | .48 | .041 | .40 | .56 |
| Neither | .39 | .042 | .32 | .48 |
| Bad | .30 | .054 | .20 | .41 |
| Very Bad | .32 | .238 | .05 | .80 |
| Don't Know | .45 | .063 | .33 | .57 |

Table 71: Estimated effect of responses to the question "What do you think of the state of the economy these days in New Zealand?" on voting for the government in the 2005 election

| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
|---------------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Lot Better | .64 | .088 | .46 | .79 |
| Little Better | .53 | .061 | .41 | .64 |
| Same | .40 | .057 | .29 | .51 |
| Little Worse | .37 | .057 | .27 | .49 |
| Lot Worse | .21 | .084 | .09 | .42 |
| Don't Know | .46 | .073 | .33 | .61 |

Table 72: Estimated effect of responses to the question "How do you think the general economic situation in the country now compares with a year ago?" on voting for the government in the 2005 election

| Estimates | | | | |
|-------------------------------|------|------------|------------------------------|-------|
| National economy, prospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Lot Better | .74 | .125 | .45 | .91 |
| Little Better | .61 | .057 | .49 | .71 |
| Same | .44 | .054 | .34 | .55 |
| Little Worse | .26 | .042 | .19 | .35 |
| Lot Worse | .17 | .042 | .10 | .27 |
| Don't Know | .40 | .055 | .30 | .51 |

Table 73: Estimated effect of responses to the question "What do you think the general economic situation in this country will be in 12 months' time compared to now?" on voting for the government in the 2005 election

In the 2005 election model, three of our economic variables are significant, with the “state of the economy these days” and the two national economic assessments all reaching significance at the 95% level. “The state of the economy these days” has the lowest effect, with the probability of voting for the government of those who had positive assessments 64% and 48% respectively, in comparison to those with negative responses 30% and 32% respectively, as seen in Table 71. While this is a significant difference, the difference between the positive assessments and those who didn’t know was not large: 48% compared to 46%. Table 72 suggests the national retrospective assessment had a slightly stronger effect. The probability of voting for the government was 64% and 53% amongst those who held positive views of the economy, compared to 37% and 21% amongst those who held negative views. Prospective views of the national economy again had the strongest effect, as suggested by Table 73. Those who thought that in 12 months the economy was likely to be a lot, or, a little better had a probability of 74% and 61% respectively, of voting for government. This was in comparison to the probability of voting for the government of those who thought the economy was a little worse, 26%, or a lot worse, 17%.

Full model

| Tests of Model Effects | | | |
|-----------------------------------|-----------------|----|------|
| Source | Type III | | |
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 23.006 | 1 | .000 |
| State of the economy these days | 9.836 | 5 | .080 |
| Household finances, retrospective | 3.564 | 5 | .614 |
| National economy, retrospective | 18.097 | 5 | .003 |
| National economy, prospective | 29.365 | 5 | .000 |
| Partisanship | 555.377 | 5 | .000 |
| Personal income | .302 | 1 | .583 |

Table 74: Anova table: significance of economic and control variables on voting for the government in the 2005 election

| Estimates | | | | |
|---------------------------------|------|------------|------------------------------|-------|
| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Lot Better | .27 | .100 | .12 | .50 |
| Little Better | .30 | .068 | .18 | .44 |
| Same | .19 | .049 | .12 | .31 |
| Little Worse | .22 | .056 | .13 | .35 |
| Lot Worse | .08 | .042 | .03 | .21 |
| Don't Know | .18 | .055 | .09 | .31 |

Table 75: Estimated effect of responses to the question "How do you think the general economic situation in the country now compares with a year ago?" on voting for the government in the 2005 election

| Estimates | | | | |
|-------------------------------|------|------------|------------------------------|-------|
| National economy, prospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Lot Better | .51 | .203 | .17 | .83 |
| Little Better | .23 | .058 | .14 | .36 |
| Same | .20 | .047 | .12 | .31 |
| Little Worse | .12 | .032 | .07 | .20 |
| Lot Worse | .09 | .033 | .05 | .18 |
| Don't Know | .16 | .042 | .09 | .26 |

Table 76: Estimated effect of responses to the question "What do you think the general economic situation in this country will be in 12 months' time compared to now?" on voting for the government in the 2005 election, as part of model with control variables

| Estimates | | | | |
|-----------------------|------|------------|------------------------------|-------|
| Partisanship | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| No selection or blank | .41 | .062 | .29 | .53 |
| Labour | .89 | .026 | .83 | .94 |
| National | .04 | .014 | .02 | .08 |
| Green | .16 | .056 | .07 | .30 |
| NZ First | .05 | .037 | .01 | .20 |
| Other minor parties | .07 | .038 | .02 | .19 |

Table 77: Estimated effect of partisanship on voting for the government in the 2005 election, as part of model with control variables

As with the 2002 election, when control variables were added to the model, only two economic variables remained significant. The first is the question addressing retrospective national assessments of the economy. The probability of voting for the government became 27% and 30% for those who believed it had improved by a lot and a little, while for those who thought it had become a little, or a lot, worse, it was 22% and 8% respectively, as indicated in Table 75. National prospective views of the economy again proved to be more important. Table 76 indicates the probability of voting for the government if respondents believed the economy would either be a lot, or a little,

better over the next 12 months was 51% and 23% respectively. In contrast, those who thought it would be a little, or a lot worse, had a 12% and 9% likelihood of voting for the government.

2008 Election

Economic variables only

| Source | Type III | | |
|-----------------------------------|-----------------|----|------|
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 1.265 | 1 | .261 |
| Household finances, retrospective | 9.605 | 5 | .087 |
| National economy, retrospective | 96.821 | 5 | .000 |
| National economy, prospective | 37.287 | 5 | .000 |

Table 78: Anova table: significance of economic variables on voting for the government in the 2008 election

| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
|---------------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Lot Better | .61 | .156 | .30 | .85 |
| Little better | .62 | .054 | .51 | .72 |
| Same | .49 | .039 | .42 | .57 |
| Little Worse | .36 | .027 | .31 | .41 |
| Lot Worse | .24 | .022 | .20 | .29 |
| Don't Know | .46 | .060 | .35 | .58 |

Table 79: Estimated effect of responses to the question "How do you think the general economic situation in the country now compares with a year ago?" on voting for the government in the 2008 election

| National economy, prospective | Mean | Std. Error | 95% Wald Confidence Interval | |
|-------------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Lot Better | .41 | .094 | .25 | .60 |
| Little better | .34 | .039 | .27 | .42 |
| Same | .46 | .039 | .38 | .54 |
| Little Worse | .47 | .039 | .39 | .55 |
| Lot Worse | .53 | .038 | .46 | .61 |
| Don't Know | .55 | .041 | .47 | .63 |

Table 80: Estimated effect of responses to the question "What do you think the general economic situation in this country will be in 12 months' time compared to now?" on voting for the government in the 2008 election

The 2008 New Zealand Election Study did not ask a question pertaining to the current situation of the economy. The remaining variables were inserted into the model and presented somewhat different results from 2005 and 2002. Positive retrospective views of the national economy, as seen in Table 79, led to a probability of voting for the government of 61% and 62%. In comparison, the probability of voting for the government decreased if respondents had negative views of the

economy: 36% and 24% respectively. The significance of prospective views of the economy was somewhat more convoluted. Table 80 indicates the probability of voting for the government actually increased if respondents thought the economy was likely to get a lot, or a little worse: 53% and 47%. In comparison, the probability of voting for the government if respondents had a positive view of the next 12 months was 41% and 31% respectively.

Full model

| Source | Type III | | |
|-----------------------------------|-----------------|----|------|
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 24.519 | 1 | .000 |
| Household finances, retrospective | 3.074 | 5 | .689 |
| National economy, retrospective | 26.500 | 5 | .000 |
| National economy, prospective | 14.283 | 5 | .014 |
| Partisan | 543.349 | 5 | .000 |
| Personal Income | .918 | 1 | .338 |

Table 81: Anova table: significance of economic and control variables on voting for the government in the 2008 election

| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
|---------------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Lot Better | .30 | .162 | .09 | .66 |
| Little better | .39 | .069 | .27 | .53 |
| Same | .29 | .043 | .21 | .38 |
| Little Worse | .23 | .030 | .18 | .30 |
| Lot Worse | .18 | .025 | .13 | .23 |
| Don't Know | .29 | .061 | .19 | .43 |

Table 82: Estimated effect of responses to the question "How do you think the general economic situation in the country now compares with a year ago?" on voting for the government in the 2008 election, as part of model with control variables

| National economy, prospective | Mean | Std. Error | 95% Wald Confidence Interval | |
|-------------------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Lot Better | .25 | .095 | .11 | .47 |
| Little better | .23 | .040 | .16 | .32 |
| Same | .27 | .042 | .20 | .36 |
| Little Worse | .25 | .039 | .18 | .34 |
| Lot Worse | .29 | .041 | .22 | .38 |
| Don't Know | .37 | .050 | .28 | .47 |

Table 83: Estimated effect of responses to the question "What do you think the general economic situation in this country will be in 12 months' time compared to now?" on voting for the government in the 2008 election, as part of model with control variables

Estimates

| Partisanship | Mean | Std. Error | 95% Wald Confidence Interval | |
|---------------------|------|------------|------------------------------|-------|
| | | | Lower | Upper |
| Labour | .88 | .021 | .83 | .92 |
| National | .03 | .010 | .01 | .06 |
| Green | .16 | .051 | .08 | .28 |
| NZ First | .30 | .079 | .17 | .47 |
| Other minor parties | .22 | .044 | .15 | .32 |
| Blank or don't know | .37 | .040 | .30 | .45 |

Table 84: Estimated effect of partisanship on voting for the government in the 2008 election, as part of model with control variables.

The model with control variables provided similar results to the economic model. The retrospective national assessments were again the most important economic variable; however, this effect was reduced somewhat: the probability of voting for the government if a respondent had a positive view of the economy over the last 12 months was 30%, a lot better, and 39%, a little better. In comparison, respondents who had a negative opinion of the economy over the previous 12 months only had a probability of 23%, a little worse, and 18%, a lot worse, of voting for the government, as indicated in Table 82. As with the economic variable-only model, the prospective national economic assessments were not as one would expect. Table 83 indicates that the probability of voting for the government was more or less even across the positive and negative response ranges, with those who held negative views of the economy being slightly more likely to vote for the government. This is likely to be a result of the way in which the NZES is undertaken, something I will come back to in the closing section of this chapter.

2011 Election

Economic variables only

| Tests of Model Effects | | | |
|--|-----------------|----|------|
| Source | Type III | | |
| | Wald Chi-Square | df | Sig. |
| Household finances, prospective negative | 27.147 | 4 | .000 |
| National economy, retrospective | 296.905 | 5 | .000 |

Table 85: Anova table: significance of economic variables on voting for the government in the 2011 election

| Estimates | | | | |
|--|--------|------------|------------------------------|-------|
| Household finances, prospective negative | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Very likely | .29 | .273 | .24. | .34 |
| Somewhat likely | .36* | .018 | .34 | .41 |
| Somewhat unlikely | .44*** | .017 | .41 | .47 |
| Very unlikely | .42*** | .024 | .37 | .47 |
| Don't Know | .33 | .034 | .26 | .39 |

Table 86: Estimated effect of responses to the question "How likely or unlikely do you think it is that your household's income could be severely reduced in the next twelve months?" on voting for the government in the 2011 election

| Estimates | | | | |
|---------------------------------|-------|------------|------------------------------|-------|
| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Lot Better | .43 | .103 | .22 | .63 |
| Little better | .66* | .026 | .60 | .70 |
| Same | .55 | .019 | .50 | .58 |
| Little Worse | .37 | .015 | .34 | .40 |
| Lot Worse | .15** | .015 | .12 | .18 |
| Don't Know | .44 | .069 | .20 | .47 |

Table 87: Estimated effect of responses to the question “Would you say that over the last twelve months the state of the economy in New Zealand has got ...” on voting for the government in the 2011 election

The 2011 NZES reduced the number of economic questions to two. Table 85 shows that both of these variables reached statistical significance. Table 86 indicates the expected probability of voting for the government if respondents believed their personal household income was likely to increase or decrease. Those who felt it was unlikely to decrease were more likely to vote for the government, 42% and 44%, compared to those who thought it would decline, at 36% and 29% respectively. Table 87 indicates the probability of voting for the government if respondents held a positive or negative view of the economy over the last 12 months. As with previous elections, those who believed the economy to have got either a little or a lot better, were 66% and 43% more likely to vote for the government. In contrast, those who believed the economy to have got a little, or a lot, worse had a likelihood of voting for the government of 37% and 15% respectively.

Full model

| Tests of Model Effects | | | |
|--|-----------------|----|------|
| Source | Type III | | |
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 88.007 | 1 | .000 |
| National economy, retrospective | 120.819 | 5 | .000 |
| Household finances, prospective Negative | 5.725 | 4 | .221 |
| Partisan | 588.596 | 5 | .000 |
| Income | 4.510 | 1 | .034 |

Table 88: Anova table: significance of economic and control variables on voting for the government in the 2011 election

| Estimates | | | | |
|---------------------------------|------|------------|------------------------------|-------|
| National economy, retrospective | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| A lot better | .15 | .075 | .05 | .36 |
| A little better | .28 | .045 | .21 | .38 |
| About the same | .24 | .034 | .18 | .31 |
| A little worse | .12 | .018 | .08 | .16 |
| A lot worse | .05 | .011 | .03 | .08 |
| Don't know | .10 | .038 | .05 | .20 |

Table 89: Estimated effect of responses to the question “Would you say that over the last twelve months the state of the economy in New Zealand has got ...” on voting for the government in the 2011 election, as part of model with control variables

| Estimates | | | | |
|---------------------|------|------------|------------------------------|-------|
| Partisan | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Labour | .03 | .008 | .02 | .05 |
| National | .91 | .015 | .87 | .93 |
| Green | .03 | .013 | .01 | .07 |
| NZ First | .03 | .024 | .01 | .13 |
| other minor parties | .09 | .023 | .06 | .15 |
| no or blank | .39 | .030 | .33 | .45 |

Table 90: Estimated effect of partisanship on voting for the government in the 2011 election, as part of model with control variables

When control variables are added to the 2011 model we see prospective egotropic assessments lose their significance: see Table 88. In Table 89 we see the expected effect of retrospective sociotropic views of the economy. Positive views of the economy over the last 12 months led to a higher probability of voting for the government than negative assessments: 15% and 28%, compared to 12% and 5%. However, the effect was not much greater than those who felt it was about the same, who had a 24% probability of voting for the government.

2014 Election

Economic variables only

| Tests of Model Effects | | | |
|--|-----------------|----|------|
| Source | Type III | | |
| | Wald Chi-Square | df | Sig. |
| Household finances, prospective negative | 33.48 | 4 | .000 |
| National economy, retrospective | 574.51 | 5 | .000 |

Table 91: Anova table: significance of economic variables on voting for the government in the 2014 election

| Estimates | | | | |
|--|--------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Household finances, prospective negative | | | | |
| Very likely | .25 | .033 | .19 | .32 |
| Somewhat likely | .34* | .023 | .29 | .39 |
| Somewhat unlikely | .43*** | .021 | .39 | .47 |
| Very unlikely | .47*** | .027 | .41 | .52 |
| Don't Know | .43*** | .039 | .36 | .51 |

Table 92: Estimated effect of responses to the question “How likely or unlikely do you think it is that your household’s income could be severely reduced in the next twelve months?” on voting for the government in the 2014 election

| Estimates | | | | |
|---------------------------------|--------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| National economy, retrospective | | | | |
| Lot Better | .88 | .028 | .76 | .87 |
| Little better | .63*** | .015 | .60 | .66 |
| Same | .35*** | .019 | .31 | .39 |
| Little Worse | .13*** | .017 | .16 | .10 |
| Lot Worse | .01*** | .010 | .00 | .03 |
| Don't Know | .25*** | .043 | .16 | .33 |

Table 93: Estimated effect of responses to the question “Would you say that over the last twelve months the state of the economy in New Zealand has got ...” on voting for the government in the 2014 election

The 2014 model is very similar to 2011. Again, both economic variables prove to be significant, as indicated in Table 91. Table 92 indicates the estimated effect of prospective egotropic responses; those who felt their personal household financial situation was unlikely to worsen over the next 12 months had a 43% and 47% likelihood of voting for the government. This is essentially the same probability of voting for the government as those who didn’t know, also 43%, but higher than those who felt their financial situation was likely to worsen, 34% and 25%. Retrospective assessments of the economy had a greater effect. Table 93 shows that the probability of voting for the government if respondents believed the economy to have improved over the last 12 months was 88% (improved a lot) and 63% (improved a little), compared to those who believed it had got a little worse, 13%, or a lot worse, 1%.

Full model

| Tests of Model Effects | | | |
|--|-----------------|----|------|
| Source | Type III | | |
| | Wald Chi-Square | df | Sig. |
| (Intercept) | 79.518 | 1 | .000 |
| National economy, retrospective | 112.333 | 5 | .000 |
| Household finances, prospective negative | 18.977 | 4 | .001 |
| Partisan | 369.598 | 5 | .000 |
| Income | .010 | 1 | .922 |

Table 94: Anova table: significance of economic and control variables on voting for the government in the 2014 election

| Estimates | | | | |
|--|------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Household finances, prospective negative | | | | |
| Very likely | .05 | .017 | .03 | .10 |
| Somewhat likely | .09 | .022 | .05 | .14 |
| Somewhat unlikely | .13 | .029 | .09 | .20 |
| Very unlikely | .12 | .029 | .08 | .19 |
| Don't know | .12 | .031 | .07 | .20 |

Table 95: Estimated effect of responses to the question “How likely or unlikely do you think it is that your household’s income could be severely reduced in the next twelve months?” on voting for the government in the 2014 election, as part of model with control variables

| Estimates | | | | |
|---------------------------------|------|------------|------------------------------|-------|
| | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| National economy, retrospective | | | | |
| Got a lot better | .32 | .068 | .21 | .47 |
| Got a little better | .27 | .037 | .21 | .35 |
| Stayed about the same | .15 | .025 | .11 | .21 |
| Got a little worse | .06 | .014 | .04 | .09 |
| Got a lot worse | .01 | .008 | .00 | .06 |
| Don't know | .10 | .027 | .06 | .17 |

Table 96: Estimated effect of responses to the question “Would you say that over the last twelve months the state of the economy in New Zealand has got ...” on voting for the government in the 2014 election, as part of model with control variables

| Estimates | | | | |
|--------------------------|------|------------|------------------------------|-------|
| Partisan | Mean | Std. Error | 95% Wald Confidence Interval | |
| | | | Lower | Upper |
| Labour | .03 | .010 | .02 | .06 |
| National | .78 | .039 | .70 | .85 |
| Green | .01 | .006 | .00 | .03 |
| NZ First | .05 | .026 | .02 | .14 |
| Other minor parties | .08 | .029 | .04 | .16 |
| No, don't know, or blank | .28 | .038 | .21 | .36 |

Table 97: Estimated effect of partisanship on voting for the government in the 2014 election, as part of model with control variables

In contrast to 2011, when control variables were introduced to the model, all economic variables retained their significance, though their effect was lessened somewhat. Table 94 shows the probability of voting for the government from responses to the prospective egotropic question. The likelihood of voting for the government if respondents believed their financial situation was somewhat unlikely, or very unlikely, to worsen, was 13% and 12% respectively. This was not significantly different from those who believed their financial situation to be somewhat likely, or very likely, to deteriorate, at 9% and 5% respectively. Retrospective assessments of the economy were again important. Table 96 indicates that the likelihood of voting for the government was higher among those who believed the economy to have become a lot better, 32%, or a little better, 27%. In

contrast, those who had negative assessments of the economy had a lower probability, at 6% (a little worse) and 1% (a lot worse).

Conclusion

While more consistent than the macro-level study, the results I have presented here lack consistency across different elections. There are, however, a number of generalisations that we can make across the three elections that use similar variables, and across all five with the one common question. Firstly, voters tended to be sociotropic rather than egotropic. Only the economic variable-only model in 2002 showed the egotropic retrospective question reaching statistical significance, and on closer examination, the expected effect was so small, it can be dismissed as near inconsequential. The prospective egotropic question in the 2011 and 2014 NZES proved to be significant. Unfortunately, the study did not ask a similar prospective sociotropic question in 2008 and 2011, so we cannot say for certain whether prospective sociotropic views of the economy would have had a higher correlation. We can say, however, that across all five elections, sociotropic variables, both retrospective and prospective, were the strongest economic variables in a voter's decision to vote for the government. Even in 2008 and 2011, Tables 85 and 91 show us that where the egotropic question reached significance, its Wald Chi-square statistic was significantly lower than that for the sociotropic question, indicating its lesser explanatory power.

Secondly, prospective national assessments of the economy were the most important economic factor. This actually runs counter to much of the research, which finds national retrospective assessments of the economy to have the stronger effect. Rather than New Zealand being an anomaly, I feel that this reflects how the NZES is undertaken. The study is a survey that is sent out immediately after an election; it asks who respondents voted for, not who they were going to vote for. Therefore, it is likely that those who believed their household economic situation would not deteriorate over the next year were reflecting on the fact their government of choice had been elected, a government whose economic policies they supported. For example, in 2002, a respondent voted Labour because they believed Labour had the best economic policies, and were, therefore, positive about how the national economy would perform in the future when Labour was re-elected to government. This effect becomes clear when we compare the prospective responses in 2005 with those of 2008. Tables 73 and 76 indicate that the perceptions of the performance of the national economy over the following 12 months had the expected linear relationship with voting for the government. The highest probability of voting for the government was from those who believed the economy would improve a lot, and the lowest probability of voting for the government came from those who believed it would get a lot worse. In contrast, the 2008 result in Table 83 shows us that while prospective voting still reached statistical significance, its effect was far more uneven, and almost reversed. The probability of voting for the government if you believed the economy would improve over the following 12 months was 25%, compared to those who thought it would get worse, 29%. This shows that supporters of the Labour-led government that had just lost the election believed the national economic situation would deteriorate under National Party policies. However, we cannot be entirely sure of this, as 2008 was also the year of the Global Financial Crisis. The general pessimistic views of voters might also be attributable to a general gloominess about what they were seeing take place across the world's economies at the time.

Fourthly, a question on the contemporary state of the economy did not provide particularly strong links to voting for the government. While the economic-only models in 2002 and 2005 showed that

it was a significant variable, and its estimated effect was reasonably substantial, it lost its significance in both models with control variables. This could be because voters find it more difficult to assess the performance of the economy without context; it is hard to tell whether the economy right now is particularly good or bad, only to tell whether it is better or worse than it was.

Fifthly, sociotropic retrospective views were a consistently strong variable over all five elections. In all of the economic variable-only models, this effect was reasonably strong. The average likelihood of voting for the government ranges from 61% (those who believed the economy had got a lot better over the last 12 months) to 19% (those who thought it had got a lot worse); this can be seen in Figure 5 below.²¹⁰ The retrospective voting effect was diminished by the inclusion of control variables. Figure 5 provides the average estimated effect of each response to the sociotropic retrospective question when included in the control model across the five elections. There is still the expected relationship; however, the difference between the extremes – a lot better and a lot worse – is reduced to 14 percentage points, compared to 42 in the economic-only model.²¹¹

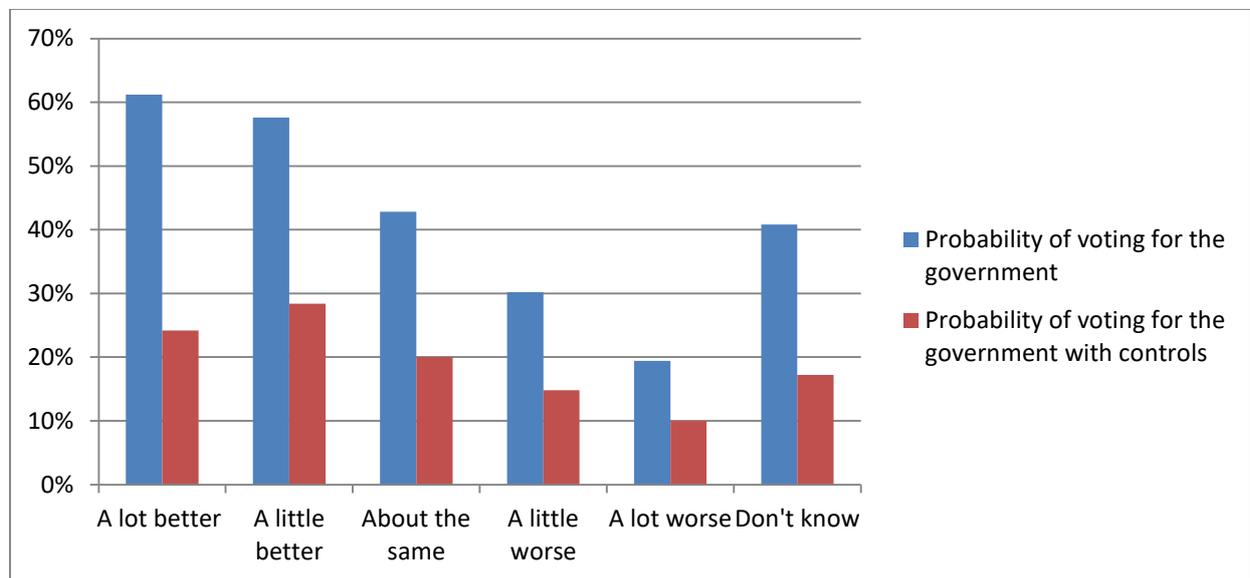


Figure 5: Average effect of retrospective sociotropic responses on voting for the government, 2002-2014

Sixthly, the most important determinant in voting for the government was partisanship. Feeling close to the leading party in government made it significantly more likely that respondents would vote for that party. The estimated probability of voting for the government if you felt close to the party in government never dropped below 85% across all the elections examined. My modelling attempted to make use of interactions between variables to determine whether there was a strong relationship between being a partisan of the party in government and feeling more positive about the economy. None of my models with interactions were able to detect this relationship. This seems

²¹⁰ The fact these averages are constructed from models that used slightly different variables, out of necessity, is problematic. The variables that were available for some years, for example 2002 and 2005, may diminish the effect of other significant variables; therefore this average graph should be treated with caution.

²¹¹ It should be noted that the relationship is not completely linear. “A little better” has a greater effect than “a lot better”. This is not likely to accurately reflect the relationship; rather, this is the result of there being so few responses in the “a lot better” category that the model was not able to accurately measure the entire effect of the variable. This belief is supported by the parameter estimate tables not included here, in which some of the response options did not reach confidence at the 95% mark.

unlikely to me, and I am hesitant to say that partisanship does not affect the way voters view the economy as performing under the party they support. Rather, I think it may result from how the model has been specified, or perhaps come as a result of the model's inability to handle the interactions due to the relatively small number of responses in a number of the response options.

Lastly, income-only showed significance at the 2011 election. For every bracket increase that a respondent's household fell into, for example from below \$14,900 to \$14,900-\$20,699, there was a 3.6% increase in the chance of voting for the government. It seems odd that income had an effect in this one election only, and it is hard to reach a conclusion about the special circumstances that may have been present in 2011 to make this variable significant. It could be the income variable suffered from how it was inserted into the model. It was treated as a continuous covariate (a scale variable) rather than a factor. The assumption was made that the income effect would be linear; if this assumption was incorrect, then this particular variable was misspecified. However, it is unlikely that this had an effect on the significance or effect of the other variables in the model.

In the following chapter I discuss where my macro- and micro-study has left the economic question in New Zealand, and where my work fits into the wider economic vote literature.

Conclusion

How do the findings of my macro-study compare to past research in New Zealand and overseas? As discussed in Chapter 3, the results of the macro-study were relatively mixed. Only the three-month lagged model fitted in with our expectations. The percentage change in unemployment and real income had an effect on the percentage change in government popularity which was comparable to some other studies. Due to the difference in methodology employed by the few works undertaken in New Zealand my work is not entirely comparable, but there are comparisons that can be made. Firstly, contrary to Hudson and Weaver's original vote-function analysis, which made the claim that 98% of the swing in the vote could be explained by economic factors, my popularity-function tests found a modest but not insubstantial effect of two economic variables on government popularity in New Zealand. This is in contrast to Gough and Brunk's analysis which found economic effects to have little or no effect in the same time period examined by Hudson and Weaver. My work does not discredit Gough and Brunk's analysis, as they undertook a vote function rather than popularity function. However, it does suggest that in a larger model with more data points, which a popularity analysis allows, independent economic measures do have an effect on government popularity. My results reflect most the conclusion reached by Ursprung, that "the basic hypothesis of the economic theory of voting behaviour cannot be rejected."²¹² However, I reach the conclusion with different economic variables. It is somewhat puzzling that unemployment in Ursprung's model failed to have an effect when in my model it did. It could simply be a result of my having used the percentage change in unemployment from quarter to quarter rather than the straight unemployment rate; it could be a result of the way unemployment was measured in each of our models, or simply, the different time periods that were involved.²¹³

My model also fitted in with a number of other international studies and their findings. Firstly, the economic vote was deemed to be symmetrical rather than asymmetrical. This was contrary to Mueller's initial hypothesis that "bust is bad for the government, but boom is not particularly good,"²¹⁴ but fits in with the now wide body of economic vote literature which has discounted this effect.²¹⁵ Likewise, the hypothesis presented in some work, that left- and right-leaning governments are judged on different economic indicators, did not prove accurate. Inflation never showed any significance, and the unemployment and real income variables affected National and Labour equally. Further, the three-month lag model, that showed a statistically significant relationship in the direction we expected, fits in with the expected time period, according to the most recent retrospective voting literature; Achen and Bartels, and Huber, Hill and Lenz all showed that recent

²¹² Ursprung, "Explaining Party Support: Sociological, Economic and Political Determinants," 34.

²¹³ As discussed in my methodology, I was unable to gain access to the same data used in Ursprung's study, and later, the methodology used by the New Zealand Government to measure unemployment changed drastically.

²¹⁴ Mueller, "Presidential Popularity from Truman to Johnson," 23. I claimed in my methodology I could not test this effect. That statement referred to the fact I could not see if only selecting negatively weighted cases increased the strength of the relationship between government popularity and macroeconomic conditions. The fact my model found a relationship with both negative and positive cases shows New Zealand's economic voting does not fit Mueller's argument.

²¹⁵ For example, Duch and Stevenson's 2008 work, "The Economic Vote: How Political and Economic Institutions Condition Election Results," 338.

events, up to two quarters, were all most voters could remember.²¹⁶ Fourthly, the economic variables I found to be significant, variations of unemployment and real income, are those which have consistently been seen to have an effect overseas. More generally, the percentages involved in my model are not directly comparable to the wide array of international literature because, as I discussed in my literature review, almost every researcher has used a slightly different variation of variables. However, my findings actually show a greater effect than some of the more recent studies. For example, in Veiga's 1998 Portuguese study, in a hypothetical situation where the unemployment rate increases from 2% to 2.29%, government popularity would drop by 0.21 of a percentage point, say from 48% to 47.79%. While my model deals with percentage changes rather than absolute levels, if I convert them in the same hypothetical situation then my model would suggest the same increase in the unemployment rate leads to a drop from 48% to 45%, a significantly larger effect. However, this was simply one of the models I ran. As discussed in Chapter 4, many of the models showed significance, but in the opposite direction to what one would expect. Due to the mixed nature of the popularity-function model I would advise significant caution about extrapolating these effects to future real-world situations. Overall, the macro-level model fluctuated over the lag models to such an extent the safest conclusion is that relatively simple macro-level models struggle to deal with complex real-world situations. This was perhaps reflected in the R^2 values of the macro-level models, which were consistently low.²¹⁷ This is not to say the popularity-function method should not be used again in New Zealand, but that ideally it would be accompanied with support from individual-level survey information. This would allow for the control of significant issues that crop up in a government's term, rather than inserting them in an ad-hoc manner, which has been done in other studies. Any further work that seeks to utilise the popularity or vote function to test economic conditions would be wise to focus on real income and unemployment as the key variables of analysis.

The micro-study results were more promising and the questions asked in the New Zealand Election Study make my study more comparable to a range of work. Generally, the micro-study fitted in with the previous work presented in the NZES series of books. They present their results by first differences rather than individual likelihood estimates as I have done in my results chapter, so exact comparisons are not possible. However, their belief that positive retrospective views of the national economy made it 34% more likely to vote for the government than a person who perceived the economy to have deteriorated was generally in line with my estimates for 2002, where the difference is 36%.²¹⁸ In 2005 and 2008 retrospective voting carried far more weight; there was a 59% and 63% difference between positive assessments and negative assessments; significantly higher than the first differences in 1990 and 1993 as listed by Vowles. So why the difference? It could simply be the result of the different methodology, but this does not explain why 2002 shows a

²¹⁶ Achen and Bartels, "Musical Chairs, Pocketbook Voting and the Limits of Democratic Accountability," 21, 36; Hill, Huber, and Lenz, "Sources of Bias in Retrospective Decision Making: Experimental Evidence on Voters' Limitations in Controlling Incumbents."

²¹⁷ While the R^2 values do not change the significant relationship that my models revealed, it does suggest that there were significant factors missing from the model that would have helped explain the Y variable.

²¹⁸ It is important to note, however, that in my model I did not create groupings of good responses and bad responses; rather, I ran the model with two positive and two negative groupings, as well as a neutral and blank option. Simply adding the estimated likelihood percentages of the negative groupings and taking that number away from the positive groupings is not likely to provide the same result as if the groupings had been combined and inserted into the model as a single option.

significantly lower effect than 2005, 2008, 2011 and 2014. Vowles and Crothers argued the economic effect in New Zealand might have been lower in 1990 and 1993 because it fits in with the argument of Lewis-Beck in his 1988 cross-national study. They argue “the strongest effect of economic voting is to benefit incumbent governments in good years, and not necessarily the opposition in bad years”.²¹⁹ That is, economic voting is likely to be higher in good years than bad years. However, this logic does not fit so well with the years in my study. The economy from 2000 onwards was essentially improving, with the unemployment rate dropping over Labour’s three terms in government. The unemployment rate was higher in 2002 than in 2005 and 2008, but it was significantly lower than what it had been already, and would surely have told voters the economy was in good shape. Further, the high likelihood of voting for the government if voters thought the economy had got better over the previous 12 months in 2011 and 2014 does not match this assumption either; 2011 and 2014 are not exceptionally good years in comparison to the economic performance under the nine years of the Labour Government. For example, there were relatively high percentages unemployed compared to the equivalent elections during Labour’s terms in office, and growth rates were not much different.

I hypothesise two causes of this. Firstly, it could be that the reduction in the number of economic questions available to insert in the model greatly increased the effect of the variables that remained. However, the likelihood of this is reduced somewhat by the models with limited variables, 2011 and 2014, not showing significantly different outcomes to 2005 and 2008. Alternatively, it could be caused by how voters perceive the performance of the New Zealand economy vis-à-vis other economies. While economic indicators were not astounding in 2011 and 2014, they were better than a number of our trading partners and economic heavyweights such as the United Kingdom. Voters believed the economy was better than it had been because they were comparing the situation in New Zealand to that of our overseas counterparts. They were also constantly being reminded how good the economy was in New Zealand, with references to our “rock-star” economy. In this respect, the economy was perceived to be performing well, and better than it had been, considering the circumstances. If perceptions of the economy are more important than its actual performance, then voters may be particularly susceptible to government or opposition advertising targeting the economy. Of course, it could be that a voter’s socialisation, that is their contact with work colleagues, friends, neighbours, and family, provides a balance to this; further investigation is required.

The implications of my findings are twofold. Firstly, despite the mixed results, it does seem that voters are influenced by the actual performance of the economy, as measured by macroeconomic conditions. This would suggest that governments should make the performance of the economy a priority. Other issues being equal, the performance of the economy could make or break a government’s re-election bid. This is of course if all other things are equal; my research has not shown that economic performance will win out over other issues all the time, rather that it is an important factor in voter decision-making. The more conclusive implication is that perceptions of the economy are of high importance at election time. The micro-level study was consistent in showing perceptions of the economy mattered when voting. This finding is of concern for the democratic process because if perceptions are more important than reality then voters are potentially in danger of being manipulated by public relations experts and media spin doctors. A government might be

²¹⁹ Vowles and Crothers, "The Material Conditions of Voting," 107.

able to successfully capture the economic vote by making it appear the economy is performing better than it actually is. If governments wish to be re-elected, they should continue to spend money on public relations experts to help communicate the economic achievements they have achieved, or at least, the economic conditions that happened to be present while they have been in office.

So it is “the economy, stupid” in New Zealand. The economy does have a significant impact on voter behaviour in New Zealand. My macro-study provided mixed results, but still suggested that unemployment and real income rates do have an impact on voting for the government in New Zealand. Economic data lagged by three months was linked to voting for the government and suggested that a 1% increase in the percentage change in unemployment led to a 0.428% decrease in the percentage change in government support, while a 1% increase in real wage rates led to a 2.899% increase in the government popularity variable. Theoretically, in a situation where all other things are equal, including the unemployment rate, an increase in the real income rate of two percentage points, from zero to 2%, could cause support for the government to increase from 48% to 50.8% three months in the future. In a close election this could be enough to swing the vote in the government’s favour. Of course, this is in the unlikely event that other factors remain equal. This support for the economic vote was added to by my micro-study. The micro-study provided consistently more convincing evidence of the economic vote in New Zealand. Across the five elections considered, positive views of the performance of the national economy in the future, and positive views of the national economy over the previous 12 months, increased the likelihood of voting for the government well above those who believed the economy had got worse, as well as being higher than those who thought the economy had performed about the same, or didn’t know. Simply put, the economy does matter to voters in New Zealand.

This thesis has provided only a small insight into the economic vote. Importantly, it has relied on relatively simple statistical modelling based on a sanctioning model of voting. There is certainly scope for a more in-depth examination using more complicated methods of analysis at both the macro- and micro-level. However, before both the macro- and micro-methods are employed again, further research should be undertaken to test the many assumptions that each of these methodologies rest on. In New Zealand, are voters actually able to tell when the economy is doing better or worse, as measured by independent macroeconomic conditions? If voter’s perceptions of the economy do relate to the actual performance of the economy measured through macroeconomic indicators, can political marketing have any effect at all? How susceptible are citizens to marketing about the economy from either the government or opposition parties? Can a well-organised campaign make voters think the economy is doing a lot better than it is? If one found this topic interesting enough, and enjoyed statistics, there is an almost endless array of questions on the economic vote that could be turned into publishable research, as Michael Lewis-Beck has clearly discovered. In the meantime, governments and opposition parties should continue, and will no doubt continue, stressing each other’s economic mismanagement, while claiming credit for anything seen to benefit the economy.

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Appendix

Eye-Witness News/Heylen Political Poll 88-B

Conducted on: Saturday 12 March 1988

METHOD SUMMARY

This poll was conducted with n=929 eligible voters, randomly selected from major New Zealand population centres and an assortment of small towns. Sampling quotas correspond to a representative (i.e., unbiased) selection from population centres with 2,500 or more residents. The smallest township included in this poll was Putaruru Borough (pop. 4,197 [Census 1986]).

Interviews were conducted face-to-face in the respondents' homes, by trained Heylen interviewers.

Unless otherwise stated, the attached tabulations are based on the total sample of eligible voters. All survey data have been weighted by computer to match the levels of party support recorded at the last election.

For a random sample of this size, the MAXIMUM margin of sampling error is estimated to be plus or minus 3.3 percentage points, expressed at the 95% confidence level. (This theoretical error margin is at its greatest size only when the actual percentage in question is 50%.)

Further details relating to weighting, sampling, and questionnaire design are available on request.